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Analysing Coopetition in Supply Chains through the Lens of Schatzki's Practice Theory

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Declaration

I, Alberto Ordigoni, declare that this study is submitted in fulfilment of the requirements for the conferral of the degree of Doctor of Philosophy, from the University of Wollongong, and is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

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Abstract

This dissertation investigates coopetition from a Supply Chain Management (SCM) perspective and focuses on the collaborative and competitive relationships that practitioners accomplish when overseeing their supply chains. Coopetition is defined as a situation in which a company engages in both collaborative and competitive interactions with a direct competitor. Previous research has associated coopetition to Research & Development (R&D) benefits, knowledge creation, knowledge acquisition, access to resources and business performance.

This study identifies two issues within the current literature. The first issue is the lack of focus on supply chain practices and practitioners and the second is the limited knowledge among scholars on how coopetition is enacted. This study addresses these research limitations by applying a different focus to the study of supply chain topics. Specifically, this study uses Schatzki Practice Theory to focus on supply chain practitioners, their actions and the impact of their decisions. As a result, this study's aim is to apply a Schatzkian practice theoretical framework to investigate coopetition in supply chains.

This study uses a multiple case study methodology to investigate coopetition in five cases involving small, medium and large for-profit organisations as well as non-for-profit ones. The data collection is based on semi-structured interviews, document analysis and observations. The results obtained by applying a Schatzkian Practice perspective show that coopetition is defined by social phenomena, composed and performed through the medium of social practices. Further, coopetition phenomena are shown to be constituted by and emerge as an aggregate of interlinked practices enacted by workers and

practitioners. Lastly, the results challenge the idea of coopetition being a business process based on simultaneous competitive and collaborative interactions, demonstrating that instead, coopetition is an open-ended and multifaceted phenomenon.

This study provides several contributions to the SCM discipline and the Coopetition field. Firstly, this study applies Schatzki's social ontology to SCM, offering an alternative philosophical approach to the dominant positivist paradigm. Secondly, the study applies an alternative theoretical framework, Practice Theory, to investigate SCM phenomena. Thirdly, it contributes to Practice Theory by applying and adapting it to an entirely new discipline, namely SCM, as well as a new field, Coopetition. Furthermore, the study presents a unique combination of ideas to explore how coopetition is performed by practitioners in the workplace, combining Practice Theory concepts, SCM concepts and coopetition concepts.

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"No man is an island, entire of itself; every man is a piece of the continent, a part of the main" - John Donne

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1 Introduction

This study explores how managers collaborate with their competitors; a phenomenon known as coopetition. Coopetition is defined as a case in which a company engages in both collaborative and competitive interactions with a direct competitor (Bengtsson & Kock 2000). When the concept of coopetition was introduced by economists Brandenburger and Nalebuff (1996), it implied a paradigm shift in management. Brandenburger and Nalebuff's (1996) idea was in stark contrast with the mainstream thinking at the time, which saw business as a 'zero-sum game' in which there are only a few winners (Vickers 1995). In contrast to this view, Brandenburger and Nalebuff (1996) presented a more nuanced and complex picture of business interactions by arguing that companies must work with other market players to create value.

In the last two decades the concept of coopetition has been investigated from different perspectives. The literature has identified various outcomes of coopetition, such as enabling companies within a business network to access resources, information and obtain strategic flexibility (Bengtsson et al. 2010; Bengtsson & Kock 2014; Dahl 2014). Scholars also associated coopetition with research and development benefits (Huang & Yu 2011), knowledge creation (Zhang et al. 2010) and knowledge acquisition (Li et al. 2011). Also, coopetition has been identified as a mechanism for accessing resources and sustaining international expansions (Bengtsson & Kock 2014).

This thesis contributes to the diversity of perspectives in the study of coopetition, by investigating this phenomena from a Schatzkian Perspective applying it to the domain of Supply Chain Management. In doing so, this study will focus on the competitive and collaborative practices that managers

accomplish when overseeing their supply chains. The notion of management practices is not reduced to a simplistic view of what people do within organisations. Rather, this study joins a rich and broad theoretical school that theorises practices as "embodied, materially mediated arrays of human activity centrally organized around shared practical understanding" (Schatzki 2001, p. 11). Coopetition has received an increasing amount of attention in the supply chain literature. Scholars have found, for example, that coopetition can be used to manage suppliers, improve supplier's performance and reduce procurement costs (Dubois & Fredriksson 2008; Wilhelm & Sydow 2018; Wilhelm 2011; Wu et al. 2010).

This study adopts a different theoretical lens in the study of SCM. As identified by the author of this study, a key issue in the current SCM literature is the lack of focus on practitioners and other people[1], their actions, the social context in which these actions are performed, and how these together impact on practices of supply chains. This lack of focus on 'who' manages supply chains and 'how' can be attributed to the positivist paradigm that inspires most of SCM research. Following this paradigm, most researchers describe supply chains as a sequence of interrelated activities independent from the social entities, relations, and practices through which they have been created (Adamides et al. 2012). Supply chains are presented as systems that can be designed and optimised like a clockwork mechanism. In turn, this view does not consider the practices, activities and entities that make up supply chains. Thus, this study calls for an alternative approach that focuses on supply chain practices and practitioners.

To this end, the guiding principle underpinning this study is that business phenomena are inherently social and material arrangements. Thus, one ought to account for the social and material arrangements that influence these phenomena. This theoretical shift ties in with a broader wave of change

[1] The term 'people' will be used throughout this work instead of 'individuals' since the latter term is commonly used in social theories that explain social action by referring to individual purposes, intentions and interests (Reckwitz 2002). On the opposite, a Practice Theory approach argues that social life is not a collection of individuals' actions but occurs through the medium of social practices (Schatzki 2002).

brought into the social sciences by a new theoretical approach called "The Practice Turn," which encompasses various Practice Theories (Schatzki et al. 2001). According to Practice theorists (Nicolini 2013; Schatzki 2002; Shove et al. 2012; Spaargaren et al. 2016), the study of social phenomena starts with social practices. Practices are considered a crucial construct to explain the link between the capacity of people to act when engaging in social relationships, and social structures. This study analyses coopetition through the lens of Practice Theory and illustrates how such a perspective can enrich our understanding of supply chain topics.

This introductory chapter is organised in four sections. The first section presents the context of the study, provides a brief introduction on the key assumptions of SCM, and introduces the topic of the study: coopetition. The second section outlines the current research limitations in both the SCM and coopetition literature. The third section presents the research aim, research questions and significance of the study. The last section provides an overview of the study chapters.

1.1 Study Background

This research is situated within the discipline of SCM (Zacharia et al. 2014). Due to the multidisciplinary nature of this discipline, there is neither a commonly accepted theory nor a standard definition of SCM (Zacharia et al. 2014). Braziotis et al. (2013, p. 648), for example, focus on the collaborative relationships between companies and define a supply chain as "*a set of primarily collaborative activities and relationships that link companies in the value-creation process, in order to provide the final customer with the appropriate value mix of products and/or services*." Alternatively, insights from Christopher (1992) and Harland (1996) draw attention to the network configuration of supply chains and argue that, through upstream and downstream linkages, companies produce value in the form of products and services for the end customer (Christopher 1992; Harland 1996).

Despite the diversity of definitions, three common elements can be highlighted:

- A supply chain is understood as a system of organisations whose purpose is to deliver a product or service to the end customer (Braziotis et al. 2013; Christopher 1992; Harland 1996)
- SCM involves the management of various flows between organisations (Coyle 2013)
- From a supply chain perspective, there is an economic rationale in adapting and coordinating activities between companies in an integrated manner (Simchi-Levi et al. 2008)

The third point above underpins the concept of supply chain integration, which is defined as the scope and strength of supply chain linkages and processes between organisations (Leuschner et al. 2013). Companies operate within large networks of purchasing and supply, and are connected using shared resources and activities (Harland 1996). The level of coordination between such organisations can impact on the costs and effectiveness of these activities. In turn, when done in an efficient way, linking activities can be a critical factor for organisational productivity (Håkansson & Persson 2004). As a result, the integration of the activities and processes associated with the flow and transformation of goods and information from the raw materials to the end user stage represents a fundamental SCM concept as well as a source of competitive advantage (Skjott-Larsen & Schary 2007).

Moreover, from a supply chain perspective, every relationship is not only a dyadic link between two organisations but is also a projection of other kinds of relationship arrangements. For instance, a manufacturing company is directly connected with its distributors and indirectly connected with the retailers that source its products or services from the distributors (Håkansson & Snehota 2000). Similarly, it is also directly connected to its first-tier suppliers (the suppliers with which it has a direct relationship) and is indirectly connected to its second-tier suppliers (its suppliers' suppliers). As a result, a growing number of scholars are moving away from a view of linear supply chains and

advocating for a network view of the supply chain instead (Carter et al. 2015).

Since companies are likely to be linked directly and indirectly to each other through multiple and complex interactions and relations in their supply network (Braziotis et al. 2013; Carter et al. 2015; Choi & Hong 2002; Choi & Kim 2008), their economic endeavours are influenced by the actions of other companies as well (Choi & Krause 2006; Wu & Choi 2005). Further, the level of coordination between companies' activities is affected by the nature of their relations, often assumed to move along a spectrum of collaborative and competitive relationships.

Supply chain collaboration is defined as two or more companies working jointly to plan and execute supply chain operations (Simatupang & Sridharan 2002). Theoretically, supply chain collaboration should harness common benefits for all parties involved as opposed to supply chain competition, which encourages individual rent-seeking behaviours to maximise a business' benefits (Lavie 2006). Scholars have suggested that two companies working in a collaborative relationship have a long-term commitment and share common goals (Perrone et al. 2003) as well as meaningful information (Uzzi 1997). In contrast, companies in a competitive relationship operate in a short-term relational orientation in a potential win-lose context (Jap 2001). Scholars have extensively investigated the benefits of information sharing and collaboration due to their critical impact on the coordination of flows and activities between companies[2].

Supply chain collaboration (SCC) is defined in various ways (Fawcett et al. 2008; Kim & Lee 2010; Soosay et al. 2008; Stank et al. 2012). In the literature, supply chain collaboration reflects the common theme of actors sharing resources, technologies, information, and goals to improve joint performance. Fawcett et al. (2008, p. 93) describe collaboration as the "*ability to work across organisational boundaries to build and manage unique value-added processes to better meet customer needs*." Moreover, collaboration involves

[2]For a systematic literature review on the topic see: Kembro et al. (2014)

the sharing of resources, information, people, and technology amongst supply chain partners (Fawcett et al. 2008). Similarly, Bowersox et al. (2003) define collaboration as a partnership in which companies work together, share resources and information, and make decisions to accomplish mutually beneficial outcomes. Examples of collaborative activities include: coordinating product development with suppliers; just-in-time practices; sharing forecast data; and sharing other strategic information such as customer orders, point of sale data and inventory levels (Angel 2002; Green & Inman 2005; Holweg et al. 2005).

Consequently, scholars suggest that a supply chain should be managed as a whole – as Gentry (1996, p. 36) explains, the chain should work as "*a single entity rather than fragmented groups*." Hence, collaboration and shared goals should be favoured over competition (Mentzer et al. 2000), while information sharing should be encouraged to contrast uncertainties and disruptive dynamics, such as the bullwhip effect (Lee et al. 1997; Lee & Whang 2000). Some scholars have emphasised the importance of unity and commonality of interests within a supply chain – they argue that the next competitive landscape should be dominated by competition between supply chains, rather than just between companies (Lambert & Cooper 2000). This notion of common goals has deeply influenced research on supply chain relationships. Scholars have investigated buyer-supplier relationships and their impact on supply chain coordination through the lens of various organisational theories, such as transaction cost theory, resource-based view, relational view, resource dependence perspective, and social exchange theory (Nair et al. 2011).

In summary, the prevailing view in the literature suggests that conflict between organisations should be minimised while cooperation should be encouraged throughout the supply chain (Li et al. 2011). Nonetheless, authors such as Cox (2004a, 2004b) and Böhme et al. (2008) have pointed out that win-win relationships are not always the most desirable outcome, and that business relationships can be valuable when unequal exchange and tension exists between companies. In particular, Cox (2004a) argues that conflict and opportunistic behaviours between parties are inevitable and thus companies

need to leverage their resources to achieve value for money, or value from supply, when interacting with buyers and suppliers. Further, despite the potential benefits of supply chain collaboration, studies have shown that few firms have been able to capitalise on it (Barratt 2001; Min et al. 2005) and hence scholars have called for more research on the topic (Goffin et al. 2006).

The mainstream view in SCM states that collaboration should be promoted between companies throughout the supply chain. This paradigm regards collaboration as one of the critical mechanisms of value creation. The emphasis on collaborative effort is based on the assumption that companies improve their performance by pooling their resources, capabilities, skills and knowledge (Padula & Dagnino 2007), and fostering positive interdependencies (Normann & Ramirez 1993). Commitment, cooperation and trust-building are again preferred over competition and self-interest. Since cooperative interdependencies are promoted and maintained by working towards common goals rather than self-interest, this approach assumes that companies have convergent interests and operate through a fully collaborative structure (Padula & Dagnino 2007).

As Padula and Dagnino (2007) point out, however, collaborative agreements between companies do not necessarily imply that organisations move from self-interested behaviours to a collectively-interested approach. Rather, it may imply that companies' private interests align with each other closely enough for collaboration to becomes a viable strategy (Gulati & Gargiulo 1999; Gulati et al. 2000; Khanna et al. 1998; Padula & Dagnino 2007). While collaboration between companies can be a successful strategy to achieve common goals, it is also a way to pursue private interests. As Padula and Dagnino (2007, p. 37) write, "*consequently, divergence of what can be considered the better course of action gives rise to a tension between the self-improvement purposes of the firms—that is, a trade-off between competitive and collaborative issues*."

Authors such as Cox (2004a, 2004b) and Villena et al. (2011) have also questioned the extent of collaboration benefits. Villena et al. (2011) investigated the relationship between social capital and firm performance in

buyer-supplier relationships (BSRs). The authors defined social capital as a valuable asset that stems from access to resources made available through social relationships (Granovetter 1992). The main findings of the study showed an inverted relationship between social capital and a firm's performance. The authors concluded that highly competitive BSRs were as detrimental to a firm's performance as highly collaborative BSRs (Villena et al. 2011). In response to these findings, scholars have started to reject the dichotomy between the competitive and collaborative paradigms, arguing for a new perspective that includes both types of relationships (Wilhelm & Sydow 2018).

The coopetition paradigm represents a middle ground between competitive and collaborative paradigms. The term describes the existence of both competitive and collaborative relationships between companies, and was made popular by Brandenburger and Nalebuff's (1996) seminal book, in which they described their work as a theory of value. Their theory was based on the proposition that a company's efforts to produce value is a dual process (Brandenburger & Nalebuff 1996). According to Brandenburger and Nalebuff (1996), companies need to work with other businesses to create value. Once value has been created, companies compete to capture it.

The coopetition paradigm, and the notion of factors that push companies to work with their direct competitors, presents a different set of assumptions from the classical paradigm in management and economics. In particular, the critical assumption of Brandenburger' and Nalebuff's (1996) theory is that companies do not work in isolation. Instead, there are different degrees of interdependence between companies. They defined coopetition as interdependence between firms, which entails both competing and collaborating mechanisms in the pursuit of maximising individual profits (Brandenburger & Nalebuff 1996).

Coopetition approaches have been attributed to the increasing interdependencies between companies and their need for collective actions, risk sharing, strategic flexibility and prompt response to markets (Bengtsson et al. 2010; Gurnani et al. 2007). Coopetition can yield joint pay-off by utilising

complementary resources owned by other companies. In contrast, competition arises when one party seeks to maximise its gains (Gurnani et al. 2007).

1.2 Limitations of Current Literature

This study highlights two limitations in the current literature. The first limitation is the lack of focus on supply chain practices and how practitioners enact these. Secondly, there is a limited understanding among scholars about how the phenomenon of coopetition is produced in everyday business interactions. The lack of attention in the literature on how supply chain practitioners enact supply chain practices in different contexts is deeply rooted and stems from the dominant research paradigm being used: positivism. This paradigm promotes theoretical assumptions of rationality, stability, linearity, and controllability (Nilsson & Gammelgaard 2012). As a result, most supply chain concepts follow a positivist approach based on regularities and patterns, which undermine the influence of social structures and their relations to human agency (Adamides et al. 2012).

Following a positivist paradigm, SCM researchers have mostly described supply chains as a sequence of interrelated activities that are independent from the social entities, relations and practises through which they have been created (Adamides et al. 2012). Supply chains are considered deterministic and closed systems where the flow of material and information can be explained through supply chain mapping and cause-effect analysis (Aastrup & Halldórsson 2008). Thus, supply chain and logistics systems are assumed to be designable according to specific performance requirements. The influence of positivism to SCM studies has led to the adoption of the systems approach (SA) as the mainstream research paradigm in SCM studies (Nilsson & Gammelgaard 2012). As a result, research problems influenced by social phenomena such as power, collaboration, culture, conflict, creativity and sustainability are often overlooked (Nilsson & Gammelgaard 2012).

The SA approach assumes that a supply chain follows a mechanical dynamic,

which can be optimised in order to achieve an efficient performance (Nilsson & Gammelgaard 2012). According to this assumption, optimisation is achieved by reducing uncertainty within a supply chain (Childerhouse & Towill 2004). Uncertainty is defined as a lack of informed decision making, lacking control over actions and predictability of supply chain dynamics, and lack of information regarding process capabilities and regarding supply chain behaviours (van der Vorst & Beulens 2002). For example, Lambert and Cooper (2000) state that controlling uncertainty that stems from customer demand, manufacturing processes, and supplier performance, is critical to SCM. Thus, supply chain systems should be designed and structured in a way that eliminates inefficiencies (e.g. waste), and allows for a seamless flow of material and information (Flynn et al. 2016).

Importantly, however, the concept of optimisation via control mechanisms to reduce supply chain uncertainty overlooks the influence of social structures on supply chains phenomena (Adamides et al. 2012). People in supply chains (including managers, workers and professionals) are viewed only in terms of their functional contributions to the system (Aastrup & Halldórsson 2008). This way of thinking views the role of social agents as being to comply with the logic of the system. Problematically, this approach fails to take into account the idiosyncratic complexity of supply chains as socio-material systems (Adamides et al. 2012). Hence, issues concerning or influenced by the actions of people are often excluded in logistics and SCM research (Tokar 2010). As Stacey (2007, p. 298) explains: "*What is striking in the dominant management discourse is the absence of ordinary people as organisations are understood as positions in markets, bundles of resources, abstract cultures and charismatic, leaders with extraordinary powers of envisioning*".

The dominance of the positivist paradigm in the field is also reflected in the theories that have been used to study SCM phenomena. Over the years, several authors have conducted literature reviews to identify the theoretical perspectives that prevail in Operations (Walker et al. 2015), Purchasing (Chicksand et al. 2012; Spina et al. 2016), SCM (Arni et al. 2007; Árni et al. 2015) and Logistics (Defee et al. 2010). The findings are similar across

different sub-branches of SCM and show that the most common theories used are Transaction Cost Economics (TCE), Resource Based View (RBV), Game Theory, and Network Theory (NT). None of these theories focus on social phenomena. TCE's primary focus is on the exchange and transaction of assets, RBV's focus is on production and firm resources, GT's focus is on conflict and cooperation of rational decision-makers, and NT focuses on exchange and adaptation processes (Halldorsson et al. 2007). Since SCM scholars tend to use organisations or networks as their primary unit of analysis, social theories are seldom utilised. Indeed, Defee et al.'s (2010) literature review of theories used in logistics and SCM studies revealed that social theories were used in less than 10 per cent of cases. Social Exchange Theory was found to be the most popular social theory in SCM research and was included in 4.6 per cent of the articles reviewed in the study (Defee et al. 2010). Other social theories represented only 5.1 per cent of articles in the review (Defee et al. 2010). Amongst that 5.1 per cent were Social Network Theory, Social Resource Theory and Theory of Planned Behaviour.

It should be noted that these theories (i.e., Social Network Theory, Social Resource Theory and Theory of Planned Behaviour) belong to the Individualist School of Thought, which claims that social phenomena result purely from the actions of individuals (Schatzki 2005, p. 466). The archetype of this theoretical model is the '*homo economicus*', which explains social action by referring to individual purposes, intentions and interests. As a result, the Individualist School claims that social order is a product of the combination of single interests (Reckwitz 2002). In turn, this school of thought considers human agency as the driving factor of social life and claims that social events should be explained by referring to practitioners and their actions, behaviours and desires. Theories associated with an individualistic approach have come under strong criticism by other schools of thought, such as post structuralism, which argues that "*the human subject is neither given, foundational, nor in charge of human action and the processes of meaning and significance*" (Schatzki 1996, p. 9).

The positivist paradigm is also reflected in the type of research questions SCM

scholars try to answer. This has led to a narrow focus on 'what' activities a supply chain should optimise in order to design a flawless system. This narrowness of focus means that 'who' implements these activities and 'how' gets overlooked. As well, this approach considers supply chain activities as being a-contextual. It also assumes that SCM practices are like blueprints that can simply be transferred between companies in unproblematic ways. So called 'supply chain best practices' are presented as examples to follow and adopt, disregarding the role of improvisations and workarounds that are necessary to make a practice work (Orlikowski 1996; Orlikowski 2007). For example, the best-selling book *The Machine That Changed the World* by Womack et al. (1990) sparked huge interest in Toyota's manufacturing and Total Quality Management (TQM) practices to broader audiences. The subsequent application of TQM 'best practices' has, however, been adopted to varying degrees of success. More specifically, it has been shown to vary both in its technical specifications and in its use across firms (Zbaracki 1998).

The second limitation identified by this study is that despite more than two decades of research on the topic, there is still little agreement on how to define coopetition, what its main theoretical components are, and the nature of the phenomenon (Bengtsson & Raza-Ullah 2016). Coopetition has been studied from different research perspectives and through the lens of multiple theories. Coopetition researchers have focused their analysis either on a network level or an activity level. For instance, scholars have used theories such Game Theory, Transaction Cost Economics and Industrial Networks Theory, thereby conceiving organisations as entities and focusing on business networks (Bengtsson & Raza-Ullah 2016). This conceptualisation is reflected in the emphasis that these theories place on the structural characteristics of complexity, such as: the number of levels in the structure of business networks; the governance of network relationships through rules, agreements and procedures; and the level of centralisation within business networks (i.e., whether a firm can influence the behaviour of the network). Other scholars have used theories such as the Resource-Based view and Strategy as Practice, both of which focus on the processual aspect of organisations. For instance, the Strategy as Practice approach used by Dahl et al. (2016) and Tidström and

Rajala (2016) is primarily concerned with practices as routines or behaviours. These authors have paid particular attention to the significance of shared beliefs systems, relationships and interdependencies (Weick & Quinn 1999).

The coopetition field is therefore highly diverse. There is no overarching research paradigm or theoretical framework that ultimately helps to define and develop a deep understanding of this concept. Subsequently, research critiques have so far not focused on specific paradigms or theories used by scholars, but rather, on the lack of a coherent framework or common references. Only recently has there been an attempt to integrate different research perspectives into a unified framework, in order to consolidate the main theoretical components of coopetition (Bengtsson & Raza-Ullah 2016).

Further, scholars have pointed to under-researched areas in the field rather than paradigmatic or philosophical issues that need to be addressed. For instance, Bengtsson and Kock (2014) identify five research areas that are currently underdeveloped: the issue of balancing cooperation and competition and the optimal blend of the two; the management of tension resulting from the contradictory logic of interactions between competition and cooperation; the study of coopetition as a multi-level phenomenon; the analysis of the mechanisms driving the patterns of events, activities and processes of coopetitive interactions; and finally, the understanding of how coopetition impacts on business models and strategy.

The lack of research on the activities and processes of coopetition points to a broader issue within the field, namely the lack of focus on the role of *people* in coopetition. This issue was discussed by Bengtsson and Raza-Ullah (2016), who proposed that scholars could adopt theories from sociology, psychology and anthropology to bring a socio-psychological perspective into coopetition studies. In particular, there is a lack of understanding of what comprises a coopetitive process, and how coopetition is carried out in practice (Bengtsson & Raza-Ullah 2016). It should be noted though, that in the field of coopetition, this lack of attention on social phenomena has been highlighted several times and some authors have started embracing sociological perspectives in their

studies (Dahl et al. 2016; Tidström & Rajala 2016). This openness to investigating the social aspect of coopetition may be because the field is heterogeneous and does not fit into a single research paradigm.

In summary, both the supply chain literature and the coopetition literature share a similar shortcoming: a lack of focus on practices and practitioners. This results an inability to explain who performs competitive and collaborative practices and how these practices are enacted in everyday activities. The next section will present how this study addresses these research limitations.

1.3 Aim and Significance of the Study

This thesis addresses current research limitations by applying a different focus to the study of supply chain topics. Specifically, it uses a Practice Theory approach to address some of current research limitations. Practice Theory's core idea is that in order to study social life, researchers should look at what people say, do, create and think. By adopting a Practice Theory approach, one can look at the wholeness of social life by studying how bodies, knowledge, objects, language, routines and people create a web of interactions that make up human life. Practice scholars are often interested in the ordinary, everydayness of life. As a result, they focus on how everyday practices and material arrangements constitute the foundations of social life, from preparing and eating meals to trading shares on the stock market. Despite their deceptively mundane topics of analysis, Practice theorists seek to understand and explain larger social phenomena such as organisational learning (Gherardi & Nicolini 2006), technology and innovation (Orlikowski 2007), food consumption (Warde 2005, 2013) and environmental change (Spaargaren & Vliet 2000).

Practice theories also seek to explain the relationship between human action and social order, which can be defined as a particular set or system of linked

social structures, institutions, relations, customs, values and practices that maintain and enforce certain patterns of relating and behaving (Schatzki 2005; Schatzki et al. 2001). Practice theorists usually split their analysis into three domains: practices, praxis and practitioners. The simplest term, 'practice', refers to the human action of doing something. In the sense of Practice Theory, 'practices' are a key construct used to explain the relationship between the capacity of people engaging in social relationships, and social structures. Practices are related to shared routines of behaviour including traditions, tools, norms and procedures for thinking, acting, and using 'things' (Seidl & Whittington, 2014; Vaara & Whittington, 2012; Whittington, 2006). Practices therefore guide or direct human activity; praxis, by comparison, is the activity itself (Reckwitz 2002).

In the organisational studies field, scholars have applied Practice Theory to analyse organisational strategies (Jarzabkowski et al. 2007; Seidl 2006), knowledge production and sharing (Brown & Duguid 2001; Gherardi & Nicolini 2000), technology at work (Orlikowski 2007), and coopetition (Dahl et al. 2016; Tidström & Rajala 2016). Various Practice scholars (Feldman & Orlikowski 2011; Jarzabkowski 2003; Seidl & Whittington 2014; Whittington 2003; Whittington 2006) suggest that strategy must be approached as something that people do rather than something that an organisation does.

This implies a paradigm shift in the study of organisations by moving the focus of the analysis from organisations' capabilities and resources to the practical competencies, skills and actions of people in organisational contexts (Whittington 2006). Indeed, Practice scholars focus on the work, talks, activities and knowledge of people within companies (Chia & MacKay 2007). This study is firmly grounded within this theoretical framework and is driven by the belief that 'practices' are a key concept for studying social and organisational phenomena (Nicolini 2013; Schatzki 2002; Shove et al. 2012; Spaargaren et al. 2016).

Practice theories provide a new perspective on social research, and promote different views on four main concepts. Firstly, Practice theories focus on the

'flux of things' in social life and depict the world as a fluid scene in which social facts are the result of ongoing work and machinations (Nicolini 2013). Secondly, Practice theories move beyond dualistic views that define concepts as either/or categories (e.g. body/mind, rationality/normativity, theory/action). Thirdly, Practice theories account for creativity and individual decisions regarding social change. Human beings are carriers of practices but performing them always requires adaptation to new contexts and circumstances. Thus, individual performances take place against the backdrop of an ongoing practice, but are not a mindless repetition or complete invention (Nicolini 2013). Lastly, Practice theories move beyond the concept of knowledge as something contemplative and rational towards something that is emergent, practical and applied.

As explained by Nicolini (2009b) and Corradi et al. (2010), Practice scholars share the following underlying assumptions:

1. Practices constitute the horizon within which all discursive and material actions are made possible and acquire meaning. Practices are always contingent and must be understood in relation to a specific place, time, and concrete historical context (Engeström 2000; Latour 2005; Schatzki 2002, 2005).
2. Practices depend on a reflexive human agent in order to be accomplished and perpetuated. The capacity of people to perform social activities always results from taking part in one or more socio-material practice (Reckwitz 2002).
3. Practices are mutually connected and constitute a bundle, texture, field, or network (Giddens 1984; Schatzki 2002, 2005; Latour 2005; Czarniawska 2007). Social co-existence exists in the field of practice, both established by it and establishing it.

Despite some similarities between practice approaches, there is no such thing as a unified theory of practice. In fact, there is a broad body of work that is classified under the 'Practice umbrella'. Starting with the work of Pierre Bourdieu (1977) and Anthony Giddens (1986), the last two decades have seen

an increase in theoretical frameworks that focus on 'practices'. This heightened interest on 'practices' in different disciplines is often a response to the perceived lack of attention on practice, practical affairs, and practitioners in mainstream scholarly work (Adamides et al. 2012; Feldman & Worline 2015; Gherardi 2009; Sandberg & Tsoukas 2011; Whittington 2006). This interest has spawned a set of new approaches to practice-based studies across disciplines (Gherardi & Nicolini 2006; Jarzabkowski 2003; Kemmis et al. 2014; Nicolini 2013; Shove & Spurling 2013; Spaargaren 2011; Warde 2005; Whittington 2003).

Among Practice scholars, philosopher Theodor Schatzki has become a central figure in the field and a source of inspiration for a series of other practice-based approaches (Kemmis et al. 2013; Reckwitz 2002; Shove et al. 2012; Warde 2005). Schatzki's (1996, 2002, 2010, 2019) theoretical framework is one of the most prominent approaches and has been applied in much practice-based empirical literature (Ahrens & Chapman 2007; Hydle 2015; Hydle & Hopwood 2019; Price 2013). Schatzki (1996) defines practices as bundles of activities made up of an organised, orderly series of connected actions, composed of bodily doings and sayings. According to Schatzki, it is through practices that people develop an understanding about actions, how to perform them and their meaning, and how to participate in social life. Practice is positioned as key to understanding human existence and social life. It is through practice that people develop and establish understandings about actions, their meaning, and how to participate in social life. At the same time, it is through action that people influence those very practices that are constitutive of what they do.

The first and main point of difference between Schatzki (1996, 2002, 2010, 2019) and other contemporary Practice scholars such as Shove et al. (2012) and Reckwitz (2002) is that he has developed a specific form of social ontology — site ontology — and linked it to the social significance of practices as a phenomena in themselves. Schatzki's (2002) focus on 'sites' is due to the ontological importance of this concept in his theoretical framework. Schatzki (2002) sees social life (i.e., human coexistence) as inseparable from the context

in which social affairs occur, and defines this form of social ontology as a 'site ontology'[3]. This particular form of social ontology is characterised by its 'flatness', since it situates social phenomena not in a vertical hierarchy but in a web of interconnections (Seidl & Whittington 2014).

Despite his claim to a flat ontological approach, however, Schatzki does not follow post-humanist practice theorists in endorsing the principle of symmetry between humans and non-humans. Schatzki differs from early Actor Network Theory scholars such as Callon (1986) and Callon and Latour (1992) who apply concepts like agency, intention, purpose, knowledge, and voice to humans as well as non-humans. Furthermore, Schatzki (2002) does not claim that powers and properties of humans and nonhumans are equally emergent from a prior matrix or plane like Rouse (1996) and Pickering (1995) have done. Although Schatzki (1996, 2002, 2010) moves beyond individualism, he does not agree with the post-humanist notion of that human agency does not have primacy. Schatzki (1996, 2002, 2010) does uphold the principle that activity is inherently entwined with objects and agrees that objects have casual and prefigurational effects on activity. Yet, according to Schatzki (2002), human coexistence is not simply a matter of people carrying out organized activities, but also one of their acting in a world of inter-related artefacts, organisms, things, and people through which their fates are coupled together. He also argues that non-human entities can, on their own accord, disrupt human affairs. For example, the COVID-19 pandemic that started in 2020 modified or rearranged existing practices while also making way for new ones (e.g., wearing face masks in many social settings, as well as social distancing) in almost every country in the world. While one could argue that these things were intertwined with human responsibility, such as the mismanagement of the pandemic during its onset, a degree of it was beyond human control and as such appears to be the doing of the non-human. However, "*saying that sociality is centred on material or nonhuman objects is much stronger than saying it is tied to and mediated by them*" (Schatzki 2002, p. 111).

[3] The concept of 'site ontology' will be explained in detail in Chapter Two.

Unlike the post-humanist view (Barad 2003, 2007; Gherardi & Nicolini 2006; Orlikowski 2006, 2007), from Schatzki's perspective, people hold a privileged position in relation to other entities, by being capable of practical intelligibility. This humanist position reveals traces of residual humanism in Schatzki's work. It is humans who are envisioned as those who carry out practices (Schatzki 2002, p. 105) – people 'understand' what they want to do, and do it with intentionality (Schatzki 2002, p. 75). Non-human entities do enable and constrain the activities humans perform, including what humans do with them (e.g., tools and machines), but Schatzki (2002, p. 117) maintains that despite this apparent symmetry, activities still hold the edge, given that the enabling and constraining effects of objects and arrangements on activities are relative to actors' ends, projects, hopes, fears and so on. Objects can make a contribution, but ultimately the nature of the contribution may in many instances depend on human beings (Schatzki 2002). As such, the author of this thesis maintains that Schatzki does use a flat ontology, but perhaps one that is not completely flat.

A second element of difference is that in both Reckwitz (2002) and Shove et al. (2012), there is no mention of explicit rules — principles that direct people on how to perform their actions — as worthwhile elements of practices. A third element of difference is related to the treatment of teleology, specifically the notion of 'ends and goals' of practices. In Shove et al.'s (2012, p. 24) framework, ends of practices are not linked to combinations of activities. Instead, practices are treated as 'performances' without greater specification. In contrast, in Schatzki's (2002, 2010) framework, teleoaffective structures — combinations of normativised and hierarchically ordered ends and activities, as well as normativised emotions — are central to the organizing and ordering of practice.

This study will draw on the work of philosopher Theodore Schatzki throughout (Schatzki 1996, 2002, 2003, 2005, 2006, 2010, 2016; Schatzki et al. 2001). Although this research will draw on aspects of Schatzki's more recent work, it will draw more deeply on Schatzki's (1996, 2002) first two books, *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*,

which covers intelligibility, normativity, and the notion of the teleoaffective structure, and *The Site of the Social. A philosophical account of the constitution of social life and change*, in which he provides a more refined account of materiality and elaborates on the notions of social site and practice-order bundles. The reasoning behind the deeper engagement with these earlier works relates to the way these texts introduce, ground and explicate the core notion of site ontology, and the idea that practices are sites where the social happens (Schatzki 1996, 2002). Furthermore, as this thesis will show, these building blocks of Schatzki's theoretical work can be used to further explore key concepts used by SCM scholars to describe the structure and boundaries of supply chains. In particular, Carter et al. (2015) selected a series of foundational premises to conceptualise supply chains – these are discussed in relation to Schatzki's practice theory in more detail below:

Assumption #1. The first assumption is that the supply chain is a network composed of nodes and links, where nodes are decision-making agents and links represent the flow of materials, information, and/or finance (Carter et al. 2015). This foundational concept resonates with Schatzki's proposition that social life is composed of a nexus or bundle of interlocked practices and orders, which determine how people, human-made objects, living entities and non-living entities hang together in a structured manner (Schatzki 1996, 2002, 2010). Schatzki's attention to the interrelatedness of practices is of value for informing how organisations relate to other organisations in "nets of practice-arrangement bundles" (Schatzki, 2005, p. 479). These nets may include markets, governments, competitors or any other nets of practice and material arrangements that constitute an organisation's context.

Assumption #2. The second key assumption is that every agent within a supply chain grapples with the tension between control and emergence (Carter et al. 2015). According to Carter et al. (2015), each agent in a supply chain has control over a limited portion of its upstream and downstream supply chains. Beyond this range, the agent has no control. This assumption relates to the notion of stability and emergence proposed by Schatzki (2002). As Schatzki (2002) writes, the social site is swept by restless movements of change, re-

arrangement and re-organisation. These changes are created by agency, which can be defined simply as 'doing'. As well, in these interrelated arrangements, practices and orders become interdependent, changing and evolving. For instance, "*changes in a practice-arrangement bundle in one organisation may trigger re-composition, reorganisation or both in the interrelated practice-arrangement bundles of other organisations. Thus, changing practices in any one element of these nets can have a rippling and often unpredictable effect across other interconnected parts*" (Price 2013, p. 100). This representation is particularly useful for describing the interconnected nature of supply chains and to account for how small changes can have an impact on a wider range of actors and structures.

Assumption #3. The supply chain is relative to a particular product/service and agent. Thus, there is no overarching, absolute supply chain (Carter et al. 2015). This concept can be related to Schatzki's (2002) notion of order as the hanging together of things, and the existence of practice-order bundles. An order is an arrangement in which entities possess meaning, identity, position and relate to each other, thus all social life exhibits relatedness, meaning, and mutual positioning (Schatzki 2002). In such bundles, entities relate and are positioned with respect to one another. Further, practice-order bundles form nexuses through common ends and actions of practitioners, practitioners' intentional relationships, chains of action, material connections between entities, and prefiguration (Schatzki 2019). Because bundles are interconnected, changes within one bundle ripple through overlapping practice-order bundles (Schatzki 2019).

Assumption #4. The supply chain consists of both a physical supply chain and a support supply chain. This means that organisations, such as third-party logistic providers (3PLs), are treated as either a physical or support node, thus considering what value-adding activities are performed in a supply chain beside a focal company's activities. For example, a typical value adding activity performed by a 3PL is storing and dispatching stock to retail customers. This concept can be related to the notion of context. According to Schatzki (2002), social orders always exist in a site, or a kind of context composed by a

connected series (or bundle) of social practices. A context can be described as a domain in which multiple, often inter-related entities and phenomena exist. It determines the entities or phenomena caught within it, and shapes entities' significance and value.

Assumption #5. The supply chain is bounded by the visible horizon of the focal agent. The supply chain generally continues beyond this visible horizon, and there are additional nodes and links of which the focal agent is unaware. This concept relates to the notion of small and large phenomena in Schatzki's framework. According to Schatzki (2016), social phenomena should be analysed as sectors, slices and aspects of a plenum of practices and arrangements. Schatzki (2016) proposes that both micro and macro phenomena are composed of practice-arrangement bundles and have the same basic composition. As a result, he defines social phenomena as smaller and larger rather than micro and macro, writing that "practices and arrangements form bundles and constellations of smaller or larger spatial-temporal spread." (Schatzki 2016, pp. 36-37). Schatzki's perspective is particularly useful for analysing how supply chains are connected and coordinated through bundles of practices. Supply chains can be described as being composed of multiple practices carried out in different sites, where common understandings among practitioners of how to carry out such practices make coordination possible. In turn, practitioners' ends and goals are achieved through the sharing of coordinated actions (Schatzki 2010).

In summary, Schatzki's theory (2002) presents a coherent framework starting from his social-site ontological position (based on a flat ontology) to his explanation of how practices connect human coexistence by creating meaning and structure for human action. Schatzki's emphasis on human life as a bundle of practices and material arrangements is especially helpful when analysing organisational phenomena. According to Schatzki (2002), any social phenomenon is a feature or slice of this web of practices. Since organisations are a social phenomenon, they can be defined as bundles of practices and arrangements too (Schatzki 2006). In turn, defining organisations as bundles of practices allows the researcher to focus on the actions performed by

practitioners within and between organisations. This brings the focus to practitioners' engagement with the world through their work, rather than focusing the analysis on organisations as standalone entities, or on individual practitioners. This approach also allows the researcher to consider how practices' structures and ends may constrain or prefigure supply chain practitioners' actions.

The aim of this thesis is to understand how coopetition is enacted through practices. In order to do so, this study applies Schatzki's Practice Theory to an investigation of coopetition in supply chains. The overall research question that guides this study is:

"How can coopetition be understood through Schatzki's Practice Theory?"

The sub-research questions for this study are:

- *Amid which practice-order bundles is coopetition performed?*
- *How is coopetition prefigured in the bundle of practices and orders? How does it emerge?*
- *Which practice elements characterise the practices in which coopetition is present (or not)?*

Firstly, by using a Practice Theory approach, this project shifts the research focus towards the practices of supply chain practitioners, the practicalities of SCM (the how's and why's) and the impact of people's actions on supply chains. Secondly, this study applies an established social theory to the analysis of SCM phenomena by re-interpreting key supply chain assumptions and providing an alternative description of its main concepts. In doing so, this study brings a new perspective to the SCM field and explores an area of SCM that is currently under-researched. Third, this study contributes to the field of coopetition by using a new theoretical model to analyse this phenomenon. That is, it aims to apply Schatzki's Practice Theory concepts to analyse, define and describe coopetition and understand how it is performed.

1.4 Overview of the Study

This study is structured into seven chapters, including this introductory chapter.

Chapter 2, '*Practice Theory as a Research Framework*', will present the philosophical and theoretical foundations of this study. The first section of this chapter will illustrate the study's ontological and epistemological foundations. Secondly, this chapter will present Schatzki's Theory of Practice.

Chapter 3, '*The Concept of Coopetition*', will introduce the main topic of the study, coopetition. This chapter aims to explain the main concepts, assumptions, and theoretical frameworks in the field of coopetition. The first section will introduce the concept itself, while the second section will discuss the main schools of thoughts in the discipline. The last section will explain how coopetition can be framed through Schatzki's Practice Theory.

Chapter 4 '*A Qualitative Methodology for Supply Chain Research*' will explain the methodology used in this study. This chapter aims to explain the rationale behind a case study methodology and provide a transparent description of the data analysis process. The first section will introduce the research paradigm that guided the research and explain the research method. The second section will illustrate the context in which the data collection took place, describe the data collection procedure, and outline the data analysis process.

Chapter 5 '*Research Findings*' will discuss the findings of the study. The results will be presented according to the sub-research questions, which are: 'Amid which practice-order bundles is coopetition performed?', 'How is coopetition prefigured in the bundle of practices and orders? How does it emerge?', and 'Which practice elements characterise the practices in which coopetition is present (or not)?'. The chapter has been divided into six sections. The first five will discuss the individual cases analysed during this study. Each section will briefly introduce the case context and then examine the practices

in which coopetition is present. The last section will provide a summary of the findings.

Chapter 6 *'Discussion'* will explore the significance of the research findings from this study. The aim of this chapter is to provide an interpretation of the findings from a Practice perspective. The chapter will discuss the three sub-research questions that drove the data collection and the results obtained. For each question, the results will be compared with the current literature, and an interpretation of the findings will be offered through the lens of Schatzki's Practice Theory.

Chapter 7 '*Conclusions*' will present the concluding remarks of this study. The aim of this chapter is to illustrate the research contributions that have been achieved. The first section will examine these contributions, while the second section will revisit the study's structure and provide a brief summary of each chapter. The third section will discuss research limitations and present future research directions.

2 Practice Theory as a Research Framework

Practice Theory represents a theoretical turning point in the social sciences (Gherardi & Nicolini 2006; Jarzabkowski et al. 2007; Nicolini 2013; Schatzki et al. 2001; Shove et al. 2012; Simpson 2009; Whittington 2003). The centrepiece of analysis for Practice scholars are social practices, or 'ways of doing'. Practices are related to shared routines of behaviour including traditions, tools, norms and procedures for thinking, acting, and using 'things' (Seidl & Whittington, 2014; Vaara & Whittington, 2012; Whittington, 2006). According to Schatzki (2002), it is through practices that people develop an understanding about actions, how to perform them and their meaning, and how to participate in social life. In turn, practice is positioned as key to understanding human existence and social life. As such, it is through action that people influence the very practices that are *constitutive* of their actions.

This study is grounded within the Practice theoretical framework, driven by the notion that 'practices' are a key concept for studying social phenomena (particularly organisational phenomena) (Nicolini 2013; Schatzki 2002; Shove et al. 2012; Spaargaren et al. 2016). The aim of this chapter is to outline the theoretical foundations of this study, which are centred on Schatzki's Theory of Practice. The first section will explain the ontological and epistemological stance taken in this study. The second section will discuss Schatzki's Practice Theory and its core assumptions.

2.1 Philosophical Stance of This Study

Academic research is a process devoted to the creation of knowledge. For management scholars, this duty ought to lead to a dual outcome: creating new knowledge by using rigorous scientific methods, and making a relevant contribution to practice (Fawcett & Waller 2011; Mentzer 2008). Every researcher, whether implicitly or explicitly, adheres to a set of epistemological choices in order to distinguish between reliable and unreliable knowledge (Johnson & Duberley 2010). Most academic research can be categorised into broader research paradigms (Denzin & Lincoln 1994). In turn, a researcher's philosophical stance significantly shapes theoretical, epistemological and methodological choices. As a result, one's research methodology, as a system of designs and problems, data collection methods and analysis, derives from the researcher's choices (Johannessen & Solem 2002).

This study embraces the Schatzkian notion of 'site' social ontology (Schatzki 2003) and supports the idea that practices are the central element in the constitution of social phenomena (Schatzki 2016), as they are "*meaning-making, identity-forming, and order-producing activities*" (Nicolini 2013, p.7). Schatzki (2002) identifies a particular type of context — the 'site' — which can be understood as "*the context or wider expanse phenomena, in and as part of which humans coexist*" (Schatzki 2002, p. 147). This type of context is mutually constitutive, specifically the "*context and the contextualised entity or event constitute one another — what the entity or event is, is tied to the context, just as the nature and identity of the context is tied to the entity or event*" (Schatzki 2005, p. 468).

Schatzki (2002) argues that social phenomena must be studied by focusing on the context in which human coexistence emerges (Schatzki 2003) and emphasises that "*human lives hang together through a nexus of interlocked practices and orders, as a constitutive part of which this hanging together occurs*" (Schatzki 2002, p. 70). This implies that researchers ought to study

relations between different practice-arrangement bundles rather than activities per se (Seidl & Whittington 2014). More importantly, like other Practice scholars such as Shove et al. (2012) and Schatzki (2016), this study agrees with the idea of a 'flat' ontology, as it refutes the idea of two or more levels of social reality and sees all social phenomena as being laid out on one plane (Schatzki 2016). As discussed in Chapter 1, however, the author of this thesis also recognises traces of (residual) humanism in Schatzki's ontological conceptions.

Flat ontological approaches tend to situate social phenomena in a web of interconnections rather than ordering them in some form of vertical hierarchy (Seidl & Whittington 2014). Traditionally, social ontologies split social phenomena between a micro and macro level (Seidl & Whittington 2014). These ontologies are classified as 'tall', which order phenomena in a vertical hierarchy of levels. From this perspective, higher levels can shape, enable or constrain what occurs in the lower levels (Seidl & Whittington 2014). Usually, these ontologies describe levels of reality as the domain of entities between which systematic relations of causality or supervenience exist. The micro level is composed of human beings as well as their actions and interactions, whereas the macro level covers entities such as social structures, systems and institutions.

Individualist ontologies, for example, focus on micro phenomena and propose that social facts are made up of constructions of individual people and their relations (Schatzki 2016). Conversely, Wholism, Durkheimian Sociology and Critical Realism (Schatzki 2002) focus on macro phenomena and argue that social facts are distinct from individual ones. For instance, Wholist ontologies focus on macro phenomena such as societies and economic systems and define these as wholes (Schatzki 2016). Similarly, Durkheim ontology claims that social facts are irreducible to individual actions and interactions.

Schatzki's Practice Theory does not define reality as being composed of different levels, such as a micro or a macro level. As a result, he does not define social phenomena in terms of individuals, systems, wholes, structures or flows.

Instead, he treats practices as the key element in the constitution of social phenomena (Schatzki 2016): "*social life, i.e., human coexistence […] inherently transpires as part of such bundles*" (Schatzki 2016, p. 32). Like other practice theorists (Gherardi & Nicolini 2006; Kemmis et al. 2014; Nicolini 2013; Shove et al. 2012), Schatzki (2002) argues that social phenomena are constituted through and experienced in terms of micro situations. In turn, so-called macro phenomena are constituted by and emerge as an aggregate of interlinked practices and their constant production and reproduction (Nicolini 2017).

According to Schatzki (2003), the contrast between micro and macro phenomena should not be at the centre of social analysis. He argues that social phenomena should be analysed as sectors, slices and aspects of a plenum of practices and arrangements (Schatzki 2002). In particular, Schatzki (2016) proposes that both micro and macro phenomena are all made up of practice-arrangement bundles and have the same basic composition. Schatzki (2016) defines social phenomena as smaller and larger rather than micro and macro. The difference between small and large phenomena is based on the extension and number of practices involved in a particular site. For Schatzki (2016, p. 33), "so-called 'macro' social phenomena are simply composed of practice-arrangement bundles that are larger – more spatially temporally extensive – than are the bundles that constitute what are called 'micro' phenomena."

When applied to supply chain concepts, this ontological stance is rather different from the dominant approaches for understanding SCM phenomena. From a Practice perspective, supply chain activities throughout the world are not created by vast structures that organise the flow of goods and information through companies' processes and procedures, information systems, government policies, regulations and trade rules. On the contrary, supply chain activities are realised in the everyday interactions between people, and between people and other objects, in millions of diverse contexts around the world (Kemmis et al. 2014). As a result, large-scale phenomena such as international trade flows or retail distribution networks emerge from and transpire through the living connection between practices. Day trading in

financial markets, for instance, is enacted by institutional investors, day traders, fund managers and market regulators, and transpires from the practices and orders that compose and link these institutions. This interconnected bundle is the site where the sociality of negotiated day trading happens (Schatzki 2002). This philosophical stance, which is based on a flat social ontology, has deeply influenced the approach and methods of this research. Rather than being based on the analysis of supply chain structures, networks and links between organisations, this research will study what managers do in everyday situations. In line with Practice Theory approaches, then, this study will focus on the 'practices' of coopetition. The next section will introduce Schatzki's theory and present the key assumptions of his theoretical framework.

2.2 Schatzki's Practice Theory

Schatzki's (1996, 2002, 2010, 2016, 2019) Practice Theory seeks to explain the constitution of social life, the nature of social existence and the character of its transformation. In his early work, like other social theorists, Schatzki (2002) emphasises how social affairs — namely what people do and how they relate to each other — appear to be orderly and organised. According to Schatzki, our world always shows some order; that is, the way humans conduct their lives, activities and routines. Schatzki's starting point is the view that 'order' is a fundamental disposition of any domain of entities. Further, he defines order as "*the way things are laid out or hang together in a specific domain*" (Schatzki 2002, p. 18). Since order is a constant feature of entities, it applies to the composition of social affairs, and is a feature of the phenomena of social life. Thus, social order can be explained as the layout of social life; the way social things such as people, artefacts (human-made objects), living entities (animals and plants) and non-living entities (non-human-made objects) hang together in a structured manner (Schatzki 2002).

Schatzki's (2002) goal is to explain such order, arguing that social life occurs through social practices. He defines these as a set of activities, an organised

and orderly series of connected actions. These actions are bodily doings and sayings, namely actions that people perform with their bodies. According to Schatzki (2002), practices are the glue of social life as they compose the fabric that holds human existence together and connects human activities. The key point for Schatzki is that social life emerges from these bundled activities. Schatzki (1996, p. 89) originally defined practices as "*temporally unfolding and spatially dispersed nexus of doings and sayings…that are linked through understandings, explicit rules, principles…[and] teleoaffective structures embracing ends, projects, task purposes, beliefs.*". In his more recent publications, Schatzki (2010) expanded the notion of practice to emphasise the notions of activity, open-endedness and time-space. He writes that *"practice organizations are mutable temporal structures. They largely govern human activity by forming sanctioned public normative contexts in which people proceed. A social practice is thus an open spatial-temporal array of doings and sayings that is governed by a largely normative array of understandings, rules, teleologies, and emotions. It is also a complex that accommodates significant differences among its practitioners"* (Schatzki 2019, p. 35).

Furthermore, the sequences of actions that make up people's lives are components of linked bundles of practices. Schatzki (2010) emphasises how people proceed through their lives amid the spatial layouts of the material arrangements that are part of these bundles. For instance, the spatial layout of the material arrangements of a seaport comprises the physical location and layout of cranes, wharfs, ships, container depos and railway lines amid which stevedores carry out their work. In turn, the physicality and geometry of these arrangements set real constraints on people's actions (Schatzki 2017). Going back to the previous example, stevedores' activities must be carried out on land or on ships; they cannot be carried out in the water. People proceed amid arrays of places and paths that are anchored in these arrangements, whereby a place is a site where a particular practice is done, and a path is a way from one place to another that enables the doing of that practice (or practices) (Schatzki 2010). Which places and paths are anchored where depends both on what practices are carried on at particular arrangements and on features of

people such as ends, projects, emotions, and beliefs (Schatzki 2010).

As people go through their day and carry out certain practices, the spatial aspects of their lives become interwoven, since they act in shared places and paths (Schatzki 2010). Practices are defined not just in terms of where they take place (the spatial element), but when (the temporal element), which constitutes the teleological and motivational dimensions of activity. Schatzki (2010) defines this combination of spatiality and temporality as the timespace of human activity. Although theorists have acknowledged that human activity is a temporal-spatial event, given that every activity happens in time and space, Schatzki (2010) proposes a more pervasive interpretation of this concept. Specifically, he highlights the significance of the temporal-spatial dimensions of activity, and the importance of interwoven time-spaces for the spatial and temporal aspects of social life.

For Schatzki, then, time and space are inherently constitutive dimensions of action, where the 'happening' of action is the opening (or coming to be, in Heideggerian terms) of these dimensions. Further, Schatzki (2010) argues that activity timespace complements the objective temporal and spatial features of society. According to Schatzki (2010), spatiality and temporality connect, and as such, practices are shaped by interwoven timespaces. These are the common, shared, and orchestrated timespaces of participants involved in given practices. In addition, as people carry out various acts, they are aware of and sensitive to the normative organization of their practices. For example, practices related to road logistics such as truck driving, route planning, and freight delivering can converge with warehousing practices such as freight receiving and putting away, and forklift driving during a morning shift in the receiving bay of a warehouse. The next section will discuss how practices are structured and organised in detail.

2.2.1 Defining practices and their organisation

According to Schatzki (1996, 2002, 2010), practices are a fundamental concept

for analysing, explaining and understanding the relationship between the capacity of people for engaging in social relationships and social structures. Firstly, a practice is a set of doings and sayings (activities); namely what people do and say. Schatzki (2002) organises these activities hierarchically between tasks and projects. Different doings and sayings can constitute the same individual action – these actions are called tasks. For instance, the action of looking at how many units of a specific product there are on a supermarket shelf can be considered a task. Different tasks grouped together can constitute further actions, which are called projects. Looking at how many units there are on a specific shelf, counting them, recording the number on a sheet of paper and cross-referring this number with a record in the Warehouse Management System would be part of the activity of inventory checking. These hierarchies of activities are also teleological, in that they serve a goal, and they should reach a final point that reflects their ultimate purpose, such as verifying the true number of stock keeping units (SKUs) on a supermarket shelf.

There is an important distinction to be made here. Although doings and saying exhibit regularities, they are not routines in the sense of standardised actions that follow a certain order every single time. Practices are not composed of a defined number of actions or a specific set of activities. Schatzki (2002, 2010) describes practices as indeterminate and open-ended: *"openness means that any practice can in principle be extended through the occurrence of additional performances that compose it. […] A practice persists whenever an additional practice-composing action is performed"* (Schatzki 2019, p. 28). Further, the persistence of open-ended sets of doings and sayings is always indeterminate. This means there is no way to determine when and if a practice will occur again, however likely or unlikely it might seem. For example, the practice of moving cargo on sail boats has largely disappeared, but it is still possible for this practice to persist due to people being willing to use this form of transportation as an alternative to fossil-fuel powered vessels[4].

[4] Sailcargo, a for profit corporation registered in Canada in 2014, plans to provide sea shipping services with a 45m square-topsail cargo schooner made of wood by 2022 (Timperley 2020).

Practices can also show irregular, unique and changing doings and sayings. As such, practices exhibit both regularities and irregularities. For instance, there is no set number or type of actions that define the practice of checking a supermarket shelf's stock. An inventory controller can count the number of units, note the number down on a sheet of paper, then repeat these actions a second time, recording the notes into a computer system and so forth.

Although a practice's activities are not based on regularities or patterns, they do form a coherent whole. Schatzki (2002) argues that doings and sayings are structured and linked through four elements:

1. Practical understandings
2. Rules
3. Teleological structure
4. General understandings

Practical understanding can be defined as know-how: knowing how to perform something, how to identify something, and how to respond to something. Practical understanding singles out how people do something and is a skill that underlies activity (Schatzki 1996, 2002). For instance, an inventory controller in a supermarket should be able to identify a specific product by looking at its ID number on his/her/their inventory list and cross referencing it with the product ID on a label attached to a shelf. Further, an inventory controller should be able to understand his/her/their manager when they are told to record any 'shrinkage' — missing items — in a warehouse location. Secondly, doings and sayings are linked by a set of rules. Schatzki defines rules as principles or instructions that direct people on how to perform their actions.

Third, doings and sayings are linked by a teleoaffective structure, which refers to the *"ends, projects, actions, and combinations thereof that participants should or acceptably pursue. It thereby encompasses existential futures that are enjoined of or acceptable for participants in the practice involved"* (Schatzki 2010, p. 62). For example, the end or purpose of counting stock could be to identify missing items or alternatively, to reconcile the number of units recorded in the warehouse management system with the dollar value of the stock stated in the company's general ledger. A practice's participants carry out

ends, tasks and projects through their doings and sayings; in turn, these ends-tasks-projects are the ones that participants ought to realise and that are acceptable to do. Generally, a teleoaffective structure exists when there is a general agreement about what is acceptable and what is not in a given practice. Along with the teleological structure of tasks and projects are emotions and moods that participants may experience. For example, an inventory controller may feel boredom when counting items on a shelf, but a practice's participant may experience different emotive states.

The fourth component of a practice is general understandings, which refer to how activities are organised through people's common concerns and standards. Since practices are social phenomena; in order to participate in them it is necessary for someone to take part in a tissue of coexistence that embraces different sets of people. General understandings help define "*what matters and what doesn't, what is worthy and what is trivial, what is proper and what is not proper behaviour*" (Sandberg & Tsoukas 2016, p. 192). An inventory controller checking supermarket stock may not be supposed to replenish a shelf until he/she/they count the number of SKUs on it.

Furthermore, Schatzki (1996) defines two categories of practices: dispersed and integrated practices. Dispersed practices encompass single actions and appear in different aspects of social life. Some examples given by Schatzki (1996) include following rules, explaining, ordering, questioning and imagining. The performance of dispersed practices mainly requires an understanding of how to carry them out properly. Hence, dispersed practices are about knowing how to do something, which presupposes "*a shared and collective practice involving performance in appropriate contexts and mastery of common understandings*" (Warde 2013, p. 20). Dispersed practices are found across many aspects of social life and are linked through shared understandings rather than rules, principles or teleoaffective elements. This characteristic defines those practices as being dispersed. since they do not belong to any specific project, end or purpose.

In contrast, integrative practices entail multiples assemblages of actions and

are *"the more complex practices found in and constitutive of particular domains of social life"* (Schatzki 1996, p. 98). Embedded in these complex assemblages are multiple actions, ends and purposes as well as emotional states and expressions (Schatzki 2002). Integrative practices belong to specific areas of social life. Importantly, too, dispersed and integrative practices are not separated from each other, and they often intersect. For instance, the activity of ordering is a dispersed practice, as the activity does not belong to any specific project, end or purpose and can found in many social situations. Ordering may be embedded in inventory managing practices. An inventory controller may order items on a supermarket shelf as part of his/her/their inventory checking practice. Yet, inventory checking is an integrative practice, as it belongs to a very specific area of social life related to business and logistics practices.

Practices are the medium through which human beings establish the meaning and know-how needed to participate in social life. Cutting across the hundreds of actions that a person performs every day is the ontological primacy of one of them (Schatzki 2002). According to Schatzki (2002), human activity is governed by 'practical intelligibility,' which can be defined as what makes sense to a person to do. Practical intelligibility guides a person's action by specifying what they can do next in the continuous flow of activity (Schatzki 2002). For example, an inventory controller might decide to report the inventory count results to his/her/their manager only after all the SKUs have been counted on the shelf.

It is in and through the activities of practices that people participate in social life. More importantly, the layout of social life — the arrangements of people, artefacts, organisms and non-living entities as well the meanings and relations between these entities — reflects an ordering that is understood and given meaning in relation to a specific practice (Price 2013; Schatzki 2002). Further, social practices form the context in which social orders are established. According to Schatzki (2002), social orders always exist in some 'context' composed of a connected series (bundle) of social practices (Schatzki 2010).

The notion of context has an important role in Schatzki's framework. According to Schatzki (2002), a context presents three characteristics. Firstly, it surrounds or immerses that of which it is the context. A context can be described as a domain in which multiple, often inter-related entities and phenomena exist. Things are entangled and immersed in their context, just like "*a fish is immersed in water*" (Schatzki 2002, p. 61). The aisles of a supermarket form the context where customers, inventory controllers, shop assistants, shopping practices and retail practices exist. Secondly, a context has the power of determination. Specifically, it determines the phenomena caught in it and shapes entities' significance and values, such as picking an item from a supermarket shelf as opposed to picking an item from one's kitchen cupboard to prepare a meal. Thirdly, a context has composition; that is, any given context is composed of the entities and phenomena that exist in it. The 'context' of a supermarket is composed of shelves, aisles, shopping trolleys, products in retail sizes. This may be contrasted, for examples, with the shelves, aisles and trolleys used in a public library. This implies that the precise character of a context varies depending on the entities and phenomena within it.

Human coexistence is accounted for through four dimensions. The first dimension is composed of mental conditions, which can be described as similar understandings about actions, rules, ends, projects, and emotions between people. Human coexistence also manifests through intentional relatedness, which refers to how one person's actions are the object of another's actions, such as an inventory controller stopping his/her/their task to let a customer pick an item from a shelf. Secondly, human coexistence takes place in the domain of settings, where people find themselves in the same context – one example would be a customer and supermarket staff in a store aisle, both needing access to the same products on a shelf. Thirdly, human lives hang together through the physical and activity-space setup of the artefacts, organisms, things and people in a specific setting, such as the aisles of a supermarket, the check-outs, the layout of the shelves, and the ordering of the products on display.

Fourth, human lives hang together not just in and through single settings, but

also across multiple ones (Schatzki 2002, 2010), for example, the supermarket aisles where an inventory controller restocks shelves, and the supermarket warehouse where he/she/they pick up products to be shelved. In turn, these forms of coexistence occur through the bundle of different practices coming together, such as shopping practices, retailing practices and supply chain practices.

The fifth and final important feature of social phenomena is their propensity to present both stability and change. In particular, social change is ultimately connected to activity because the former always implies changes in human activity (Schatzki 2019). Practices and orders are continuously shifting, reshaping the fabric of the social site. Thus, practice-order bundles are often subjected to forms of change, re-arrangement and re-organisation (Schatzki 2019). This movement is not completely random. Rather, it is created within the existing bundle of practices and orders, which then shape and influence the direction of the future (Schatzki 2002). This implies that people do not make up activities as they go but instead follow qualified paths of action. These paths of actions are prefigured by existing bundles of practices and orders.

This point related to the prefiguration of agency needs to be qualified further. Prefiguration does imply that practices unfold in a particular way, as the actions that are feasible for someone to perform are often endless and always indefinite. Rather, the bundle of practices and orders make certain courses of action "*difficult, ill-advised, circuitous, disruptive, and not very feasible*" (Schatzki 2002, p. 226). For example, an inventory controller counting units on a shelf may decide to record the SKUs product code and quantity on a sheet of paper instead of using his/her/their portable barcode scanner (RF device). Though possible, this course of action is more time consuming and prone to error compared to using the RF device. Even though inventory management practices involve using tools such as barcode scanners, this does not guarantee that an inventory controller will use a scanner to count inventory. As noted by Hydle and Hopwood (2019), prefiguration means that a practice has the propensity to unfold in a certain way, but people still need to make sense of a situation such that a prefigured course of action is upheld or not. To this point,

if the inventory controller thinks that the scanning machine has poor Wi-Fi reception and will not transmit information to the Warehouse Management System correctly, he/she/they might decide to use pen and paper to count inventory. Similarly, emergent practices are the results of people's "*decisions and judgements concerning when and how to deviate from, bypass and adapt to non-routine demands*" (Hydle & Hopwood 2019, p. 1962).

2.3 Chapter Summary

The stated aim of this chapter was to illustrate the theoretical foundations of this study, which are based on Schatzki's Practice Theory. To this end, the first section of this chapter outlined the philosophical stance of this study based on a Schatzkian (2016) notion of a flat ontology, which considers social affairs to be laid out on one level of reality. Lastly, this study embraces a 'site' social ontology, based on the idea that practices are the central part of the constitution of social phenomena and the key element of social analysis (Schatzki 2016).

The second section discussed Schatzki's Theory of Practice. Schatzki's account is comprehensive, as it presents an understanding of the nature and structure of social life based on practice. Schatzki's approach is based on three key assumptions. Firstly, he adopts a flat ontology and claims that social phenomena are laid out on one level of reality (Schatzki 2016). Further, he argues that social phenomena must be studied by analysing the context or site in which human coexistence emerges (Schatzki 2003). Additionally, he considers practices as the glue of human coexistence and claims that social life transpires from the bundles of practices and material arrangements that constitute the context of social life (Schatzki 2002, 2016). Lastly, he argues that practice-order bundles are constantly changing in a non-random way. This movement is created within the existing bundle of practices and orders, which in turn shape and influence the direction of the future through the prefiguration and emergence of practice bundles (Schatzki 2002). The next chapter will introduce the main topic of the study: coopetition. Coopetition is

defined as the existence of both competitive and collaborative relationships between companies. The chapter will explain the main concepts, assumptions, and theoretical frameworks in the field of coopetition and show how Schatzki's Practice Theory can be used to study coopetition phenomena.

3 The Concept of Coopetition

Coopetition is a captivating concept. The key assumption of coopetition is that there are different degrees of interdependence between companies and these interdependencies can be leveraged to create value. Coopetition can yield joint pay-off by utilising a company's complementary resources and often arises when one party seeks to maximise its own gains (Gurnani et al. 2007). What is fascinating about co-opetition is that it appears to be ubiquitous in supply chains (Pathak et al. 2014). It also seems to span over a variety of industries such as the semiconductors industry (Browning et al. 1995), the steel industry (Gnyawali et al. 2006), the pharmaceuticals industry (Quintana-García), and the food industry (Galdeano-Gómez 2015).

Yet, in spite of more than two decades of study on the topic, there is still little agreement on how to define coopetition, its main theoretical components and the nature of the phenomenon (Bengtsson & Raza-Ullah 2016). As such, this chapter's aim is twofold. Firstly, this chapter will explain the main concepts, assumptions and theoretical frameworks and the current research limitations in the field of coopetition. Secondly, it will illustrate how Practice Theory can be applied to analyse coopetition phenomena. The first section will introduce the concept of coopetition, while the second section will discuss the leading schools of thoughts in the discipline. The third section will present the latest school of thought in the field, which tries to integrate the main theoretical concepts of coopetition into a coherent model. The last section will analyse coopetition through the lens of Schatzki's Practice Theory and present the study's research propositions.

3.1 Introducing Coopetition

In order to illustrate their theory, Brandenburger and Nalebuff (1996) proposed a model called the Value-Net. The Value-Net represents the market in which a focal company operates. According to Brandenburger and Nalebuff (1996), managers need to understand the interdependencies between market players and how one player's move affects the others in the game (Brandenburger & Nalebuff 1996). Market players are split into four categories:

- Customers
- Suppliers
- Competitors
- Complementors

Alongside familiar categories such as customers, suppliers and competitors, Brandenburger and Nalebuff (1996) described a new type of player: complementors. Complementors are defined as players that add value to a focal company's products or services more than when the company offers those alone. Together with the focal firm, market players and their interdependencies make up a value network. As a result, players' interdependencies and relationships are key strategic factors to be evaluated when making decisions. According to Brandenburger and Nalebuff (1996), no decision can be made in isolation from a host of other decisions. As well, market players have a range of strategic choices that include both win-lose (competitive) and win-win (cooperative) scenarios.

The notion of coopetition was further developed by Bengtsson and Kock (2000) in their seminal article: 'Coopetition in Business Networks—to Cooperate and Compete Simultaneously'. The article was pivotal in re-defining the concept of coopetition and strengthening its theoretical domain. The article had three main contributions. Firstly, it redefined the concept of coopetition and narrowed the scope of the phenomenon. The authors defined

coopetition as a phenomenon where a focal company is engaged in both cooperative and competitive interactions with a competitor in its product or service area (Bengtsson & Kock 2000).

Secondly, the authors proposed an 'activity focused' analysis of coopetition by concentrating on which activities were related to collaboration and which activities were related to competition (Bengtsson & Kock 2000). As a result, they attempted to clarify which activities would be affected by collaboration and which activities would be affected by competition. Based on their empirical findings, Bengtsson and Kock (2000) argued that coopetition would be more likely in a context where companies have heterogeneous resources. Further, they stated that the degree of coopetition would be influenced by companies' positions in the value network. They argued that competition might be more fierce in downstream activities closer to the customer and cooperation might be stronger in upstream activities further away from the end customer (Bengtsson & Kock 2000).

Lastly, Bengtsson and Kock (2000) linked coopetition to the interaction between companies' actions and industry structure. They proposed that coopetition can derive from the structural conditions of the industry, such as the structure of the value chain or the structure of the market. They defined the structure of the value chain as the activities that an actor performs in the chain and the value they create. Further, they defined the structure of the market based on the different business of product areas in which companies cooperate or compete (Bengtsson & Kock 2000). More specifically, they proposed that there is a reciprocal relationship between industry structure and companies' actions, and related coopetition to the structure of the value chain and the structure of the market.

Bengtsson and Kock (2000) referred to Giddens' (1986) concept of 'structuration' to explain this theoretical stance. Giddens (1986) affirms that social structures create social action – at the same time, social action creates those structures. Similar to Giddens' (1986) view, Bengtsson and Kock (2000) claim that structure constrains people's actions and consequently constrains

companies' activities.

In summary, Brandenburger and Nalebuff (1996) and Bengtsson and Kock (2000) presented two distinct views of coopetition as either a direct or indirect relationship. Through the first perspective, coopetition can be described as a business strategy within a value net, where competition between companies is affected by collaboration between others (Brandenburger & Nalebuff 1996). Thus, "*the two logics of competitive and collaborative relationships inherent in coopetition are divided between actors in the Value-Net*" (Bengtsson, Kock, et al. 2016, p. 7). Offering an alternate perspective, Bengtsson and Kock (2000) defined coopetition as a direct relationship between competitors, in which collaborative and competitive interactions are divided between activities (Bengtsson & Kock 2000; Bengtsson, Kock, et al. 2016). These two approaches influenced the main directions that scholars took to analyse coopetition, either as having a network context or as relationships between companies (Bengtsson & Raza-Ullah 2016). The next section will introduce the two primary schools of thought in coopetition research and explain the main differences between them.

3.2 Schools of Thought in Coopetition Research

Insights from Brandenburger and Nalebuff (1996) and Bengtsson and Kock (2000) have influenced much of the literature over the last 20 years (Bengtsson & Kock 2014; Bengtsson & Raza-Ullah 2016; Walley 2007). The analysis by Brandenburger and Nalebuff (1996) of companies' interactions inspired the Actor School of Thought, while the process approach of Bengtsson and Kock (2000) inspired the Activity School of Thought. Scholars from both schools have studied coopetition through the lens of different theoretical frameworks. As a result, relevant studies display a variety of different angles to coopetition. This section will compare the two schools of thought and summarise the main theoretical frameworks used in the field of coopetition.

The Actor School of Thought analyses coopetition from a network perspective and assumes that a focal company would cooperate with some companies and compete with others in its business network. According to this school of thought, collaboration and competition are often assumed to be mutually exclusive. Studies within this school of thought have often conceptualised business networks as 'systems' (Gnyawali et al. 2006; Pathak et al. 2014), focusing the analysis only at a network level (Bengtsson & Raza-Ullah 2016). This school looks at on the context of coopetition, and in particular, the business network in which companies operate. It also assumes that firms cooperate with one set of actors such as suppliers and customers, and compete with others that pose a threat to their products or services and make them less attractive to a supplier (Bengtsson & Raza-Ullah 2016). Thus, this school of thought is considered to take a macro view of coopetition.

Scholars from the Actor School of Thought analysed coopetition through various theories. Researchers from the Actor School of Thought have applied Game Theory (Brandenburger & Nalebuff 1996; Colin et al. 2003; Lado et al. 1997; Ritala & Hurmelinna-Laukkanen 2009), Transaction Economics Theory (Quintana-García & Benavides-Velasco 2004), and Network Theory (Pathak et al. 2014) to coopetition topics. Game Theory analyses interdependent decision making to study situations characterised by small numbers of players, limited information, hidden actions, opportunities for adverse selection, or incomplete contracts. This theory allows researchers to investigate situations in which cooperation (or competition) emerges through reciprocal interactions among participants (Quintana-García & Benavides-Velasco 2004). Brandenburger and Nalebuff (1996) used Game Theory to describe how a company can achieve positive business outcomes by avoiding mutually destructive competition with other market players. According to Game Theory, coopetition is a viable alternative to pure competition: "*The better way is to find win-win opportunities with competitors because it is very difficult to eliminate them*" (Quintana-García & Benavides-Velasco 2004, p. 930).

Transaction Cost Economics (Coase 1937; Williamson 1973, 1975, 2010) has

also provided a theoretical background for the study of coopetition. The assumption of TCE is that transactions of goods and services are affected by transaction costs, due to agents' bounded rationality and opportunistic behaviours (Williamson 1975). Thus, TCE analyses the relative costs of planning, adapting and monitoring transactions under alternative governance structures (Williamson 1981; Williamson 1975). In other words, "*TCE tries to explain how trading partners choose, from the set of feasible institutional alternatives, the arrangement that offers protections for their relationships-specific investments at the lowest total costs*" (Shelanski & Klein 1995, p. 337). Governance structures exist between the poles of pure market transactions based on the price mechanism, and firms' vertical integration based on internal hierarchies (Williamson 1975).

TCE explains coopetition as a form of governance that sits in between markets and internal organisations, and proposes that cooperation supports the exchange of tacit knowledge[5] between companies. It is difficult to transmit tacit knowledge among companies, and it is unfeasible to do so through market transactions. Market mechanisms are not an efficient way to transfer this type knowledge because potential buyers cannot quantify the real value of it, and at the same time, the seller cannot reveal the value of the information to convince potential buyers without losing their intellectual property (Madhok 1997). As such, cooperation can be an efficient way to access and transfer tacit knowledge between organisations (Quintana-García & Benavides-Velasco 2004). Yet, TCE predicts a higher failure rate for cooperation when partners are competitors due to the risk of uncontrolled information disclosure and opportunist behaviours: "*The incentives to act opportunistically appear to motivate actions that undermine cooperation agreements. These incentives are intensified by the abilities of competitors to recognise and appropriate key technologies and know-how from partners*" (Quintana-García & Benavides-Velasco 2004, p. 929).

Network theories such as the Industrial Network School (Håkansson & Ford

[5] Tacit knowledge is seen as practical or 'understood' knowledge, which is related to skills and abilities developed through exercises and practice (Polanyi 1967).

2002; Hakansson & Snehota 1995) and Social Networks Theory (Granovetter 1985; Uzzi 1996, 1997) have been widely used. The Industrial Network School (Håkansson & Ford 2002; Hakansson & Snehota 1995) focuses on the evolutionary and embedded features of networks and argues that business networks are borderless, self-organising systems whose dynamics emerge from actors' local interactions. Thus, business networks are seen as complex systems in which actors pursue their interest and that are only weakly manageable (Ritter et al. 2004; Stacey 2001).

Much of the SCM literature on coopetition can be traced back to the Actor School of Thought approach, particularly Network Theories (Pathak et al. 2014). Within this area of the literature, co-opetition has been defined along a horizontal dimension (supplier-supplier), and a vertical dimension (buyer-supplier) (Kotzab & Teller 2003). For instance, Kotzab and Teller (2003) investigated value-adding partnerships and coopetition arrangements in the Austrian grocery industry between suppliers (horizontal dimension). The authors' study corroborated the assumption that collaborative activities are more likely to take place in the upstream stages of the value chain, whereas competitive activities are more likely to take place in the downstream stages of the chain, closer to the final customer. Dubois and Fredriksson (2008) investigated coopetition from a vertical perspective. The authors explored the concept of triadic sourcing strategies to manage competition and collaboration in a supply chain triad (supplier-supplier-buyer) (Dubois & Fredriksson 2008). The authors showed that in a triadic sourcing scenario, a buyer can actively create interdependencies between its suppliers to enhance efficiency and innovation (Dubois & Fredriksson 2008).

The active role of buying firms in promoting coopetition amongst its suppliers has been confirmed in later studies (Wilhelm 2011; Wu et al. 2010). Wu et al. (2010, p. 121) proposed that *"when competing suppliers deliver poor performance to the buyer, the buyer would be motivated to step in and subsequently instigate collaboration between competing suppliers with the aim being to have them help each other out to resolve operations problems."* Wilhelm (2011) argued that a buying firm is not only able to manage horizontal

supply chain relations by instigating coopetition between its suppliers, but it is also possible to manage the tensions in the supply network through the active establishment and maintenance of such relations. In addition, Pathak et al. (2014) identified four supply network dimensions — firm-level task, firm-level tie, network level objective, and governance — as the interpretive scheme. They theorised coopetition dynamics in the four archetypes by applying the micro-process-based evolution framework (Pathak et al. 2014).

Inter-firm interactions have also been found to emerge from social relationships and to link organisations within and across networks (Bengtsson & Raza-Ullah 2016). Social Network Theory authors argue that the structure and quality of social ties among companies assist or impede economic performance by creating unique opportunities for companies (Borgatti & Xun 2009; Uzzi 1996). As Uzzi (1996) writes, companies operate on a logic of exchange defined as 'embeddedness'. Embeddedness refers to the fact that exchanges within a social group have an ongoing social structure, which constrains the set of actions that humans can choose from and influences the disposition of those humans toward the actions they may take (Uzzi 1996).

According to these theoretical approaches, coopetition is embedded in a network of relationships at individual, department and organisational levels. Within these relationships, bonds function as 'glue': *"In these relationships, different bonds are bound to arise and function as "glue" in a relationship, thereby creating a long-term perspective. Competition, on the other hand, is expected to create short term action-reaction patterns, or competition dynamics, which lock the organizations, departments or individuals into created positions"* (Bengtsson, Kock, et al. 2016, p. 6).

Table 1 provides a summary of the major theoretical frameworks used by the Actor School of Thought.

Table 1 - Actor School of Thought theoretical frameworks

Theoretical framework	Perspective on coopetition
Game Theory	A way to achieve positive business outcomes by avoiding mutually destructive competition with other market players (Brandenburger & Nalebuff 1996)
Transaction Cost Economics	A form of governance between markets and internal hierarchies that supports tacit knowledge exchange (Quintana-García & Benavides-Velasco 2004)
Industrial Networks Theory	Structural dimensions and network positioning can explain the ongoing process of coopetition in networks (Pathak et al. 2007; Pathak et al. 2014)
Social Network Theory	Coopetition is embedded in a network context consisting of relationships (Zhang 2010)

The Actor School of Thought has been criticised for being too broad to address the complex nature of coopetitive relationships (Bengtsson & Raza-Ullah 2016). Bengtsson, Raza-Ullah, et al. (2016) argue that the Actor School of Thought falls short of exploring the critical micro-foundations of coopetition, such as cognitive, behavioural, and emotional issues, and lacks a fine-grained analysis of the underlining contradictions, tensions and challenges that may arise in a coopetitive process between a pair of firms. Further, Bengtsson, Raza-Ullah, et al. (2016) claim that the Actor School of Thought does not provide practical insights into how to manage coopetitive relationships with other firms, how to deal with the risks and tensions of cooperating with competitors, and how to successfully manage coopetitive relationships.

The Activity School of Thought claims to tackle some of these research challenges. Firstly, the Activity School of Thought focuses on coopetitive relationships at a dyadic level rather than at a network level. It argues that companies simultaneously cooperate in some activities but compete in others (Bengtsson & Raza-Ullah 2016). Coopetition is not considered a dichotomic construct where competition and cooperation are mutually exclusive (Chen 2008). The Activity School of Thought considers coopetition to be a multidimensional variable in which competition and cooperation occurs at the same time (Bengtsson et al. 2010). Thus, the Activity School of Thought refuses "*employing a definition on co-opetition that divides the two logics of interaction between actors in a value net or a network implies that firms either are cooperating or competing with each other, and this is not co-opetition*" (Bengtsson & Kock 2014, p. 181). According to this view, the critical characteristic of coopetition is the paradoxical nature of its contradictory and yet interrelated elements (Chen 2008; Gnyawali et al. 2006; Raza-Ullah et al. 2014). In summary, the Activity School of Thought takes a micro or process view of coopetition.

The Activity School of Thought has many theoretical roots. The Resource Based View (RBV) is one of the major influences (Bengtsson & Kock 2000). According to the RBV, a firm can be defined as a unique bundle of resources and competences (Penrose 2009). This school of thought argues that firms' specific capabilities and assets, as well as the existence of isolating mechanisms, determine their performances (Wernerfelt 1984). Wernerfelt (1984) defined firms' resources as intangible and tangible assets, which are semi-permanently tied to the firm. Hence, firms are different from each other because of their specific resources and capabilities, which are difficult to replicate due to the intangible nature of many assets (Teece et al. 1997). Firms' resources can entail a company's know-how as well as its financial, physical, and human assets (Barney 1991). From this perspective, a company's competitive advantage is generated through resources that create value and are unique. This means that a company's assets are the main drivers of value creation. Value is not, however, produced mainly by using internal resources;

instead, a significant source of value lies in the external resources owned by a company's suppliers (Gulati et al. 2000)

According to the RBV, a company cooperating with a competitor can access resources that would otherwise be inaccessible and create a competitive advantage (Bonel & Rocco 2007, 2009; Gnyawali & Park 2009). Further, the benefits of coopetition are twofold. Firstly, competition can stimulate companies to improve efficiency and increase innovativeness (Bengtsson et al. 2010). Secondly, cooperation can allow companies to share knowledge and access to resources (Bengtsson et al. 2010). As a result, coopetition can be a complementary paradigm to competitive and collaborative business models (Bengtsson, Kock, et al. 2016).

Recently, Dahl et al. (2016) and Tidström and Rajala (2016) applied a Practice framework to coopetition studies. Specifically, the authors utilised a Strategy as Practice approach (SAP) to analyse coopetition. This approach investigates the doing of strategy, who the strategists are, what they do, what tools they use, and how they carry out a strategy (Jarzabkowski & Spee 2009). The SAP framework emerged as a response to the marginalisation of people and their motivations and actions in strategy studies. As a result, SAP aims to improve management and organisation research by bringing practitioners to the centre of the analysis (Whittington 2003). Authors such as Mir and Watson (2000) and Jarzabkowski and Spee (2009) argue that SAP contributes to the broader constructivist turn in strategic management studies.

SAP scholars suggest that strategy must be approached as something that people do, rather than something that an organisation has. Hence, SAP implies a paradigm shift in the study of organisations, moving the focus of the analysis from organisations' capabilities and resources to the practical competencies, skills and actions of people (Whittington 2006). SAP scholars therefore focus on the work, talks, activities and competencies of practitioners within companies (Chia & MacKay 2007). SAP theory splits its analysis into three domains: practices, praxis and practitioners. In simple terms, 'practice' refers to the human action of doing something. Under the lens of Social Practice

Theory, however, 'practices' are a key construct for explaining the relationship between the capacity of people engaging in social relationships, and social structures (Whittington 2003).

SAP scholars assert that practices are shared routines or behaviours, which can include traditions, norms and customs as well as rules for thinking, acting and using things (Whittington 2006). Practices are related to shared routines of behaviour including traditions, tools, norms and procedures for thinking, acting, and using 'things' (Seidl & Whittington, 2014; Vaara & Whittington, 2012; Whittington, 2006) – that is, practices direct human activity (Reckwitz 2002). Praxis, on the other hand, is the activity itself. In the organisational context, praxis is related to meetings, talks, presentations or any other activity related to people's work (Whittington 2003). Practitioners are the people who shape organisational activities *"through who they are, how they act and what practices they draw upon in that action"* (Jarzabkowski et al. 2007, p. 10). According to Tidström and Rajala (2016), one of the benefits of SAP is its ability to capture both deliberate and emergent features of strategising, as well as conceptualising strategy as an activity that occurs in an organisation, alongside interactions with competitors and the institutional environment.

Dahl et al. (2016) write that the formulation and implementation of coopetition strategy is embedded in the web of social practices at an institutional level, an inter-organisational and intra-organisational level. For Dahl et al. (2016), practices provide general rules and norms for competing in the market. They add that these norms are intertwined with relationship-specific norms guiding the interaction of two or more competitors.

> *Accordingly, strategic activities can be distinguished both at the inter- and intraorganizational levels. At the inter-organizational level, the competitors mutually engage in activities to formulate, reformulate, and implement their cooperative activities and mutual value creation. At the intraorganizational level, strategic activities, in terms of leveraging mutual benefits* (Dahl et al. 2016, p. 98).

The SAP approach has been praised by Dahl (2014) for its relevance to coopetition research for two reasons. Firstly, SAP focuses on the social nature of strategic activities and the influence of people from all levels of organisations (Jarzabkowski & Spee 2009; Vaara et al. 2004), and secondly, it considers how social structures and interactions impact on strategy. This approach can be applied to coopetition studies to illuminate the social aspects of coopetition, putting people at the centre of the analysis. This resonates with the recent call by Bengtsson and Kock (2014) to focus more on people due to the lack of research on those who manage coopetition activities. Further, SAP supports the view of coopetition as a dynamic phenomenon and highlights simultaneous existence and interplay between deliberate and emergent features associated with coopetition strategy (Dahl et al. 2016).

Similarly, Tidström and Rajala (2016) recommended SAP for its focus on time and activities. The authors point out that coopetition often occurs in business networks in which relationships and activities change and evolve, and are influenced by previous relationships at other points in time. Through its assumption of reality in flux, SAP considers the flow of activities and its evolution. Tidström and Rajala (2016, p. 38) argue that SAP and Coopetition studies "*naturally complement each other and constitute a relevant frame of reference for increasing our understanding of coopetition strategy*". Table 2 summarises the main theoretical frameworks used by the Activity School of Thought.

Table 2 - Activity School of Thought theoretical frameworks

Theoretical framework	Perspective on coopetition
Resource Based View	A company cooperating with a competitor can access resources that would otherwise be inaccessible and create competitive advantage (Bengtsson & Kock 2000; Gnyawali & Park 2011; Luo et al. 2006)
Strategy as Practice	Coopetition strategy lies at the intersection of two or more competing organizations' practices, praxis, and practitioners, and the institutional environment (Dahl et al. 2016; Tidström & Rajala 2016)

In sum, the two schools of thoughts take different approaches to coopetition, either focusing on the network level or the activity level. These schools are not logically contradictory but rather complementary. If taken together, they can provide a rich description of coopetition. The next section will illustrate a research framework that summarises the contributions of the two schools and defines a third way to approach coopetition.

3.2.1 Consolidating the Field, the DPO Framework

The fact that coopetition has been studied from very different theoretical angles adds to the variety of definitions and topics investigated. The field has always been fragmented and diverse (Bengtsson & Kock 2014), but the majority of the literature reviewed, has focused on some key topics. Bengtsson and Raza-Ullah (2016) integrated these significant themes into a coherent framework based on three overarching themes: (1) the drivers of coopetition, (2) the process of coopetition and (3) its outcomes.

The Drivers of coopetition are what push companies to collaborate with a direct competitor. Bengtsson and Raza-Ullah (2016) define the following types

of coopetition drivers: external; relational; and internal. External drivers define the contextual market settings that encourage companies to pursue coopetition; they can relate to industrial characteristics, technological trajectories and stakeholders' influence (Bengtsson et al. 2010; Bengtsson & Raza-Ullah 2016). Industrial characteristics relate to the industry structure and how it affects coopetition strategies (Chen 2014; Luo 2004). For instance, Pathak et al. (2014) theorised that coopetition would be affected by the type of network structure in which companies operate. Also, challenging growth levels as well as uncertainty and instability in the industry can promote coopetition amongst firms to cope with the loss of competitive advantage (Li 2010; Padula & Dagnino 2007; Ritala 2012). Technological convergence and similar knowledge structures can also drive companies towards coopetition (Padula & Dagnino 2007). For example, Gnyawali and Park (2011) argue that coopetition is helpful for addressing technological challenges, creates benefits for partnering firms, and advances technological innovation. In particular, coopetition can reduce R&D costs (Gnyawali & Park 2009) and technological complexity (Oshri & Weeber 2006). Thus, coopetition can be a strategy to cope with complex technological challenges that a single firm cannot take on by itself (Bengtsson & Raza-Ullah 2016).

The stakeholders' influence on coopetition has been confirmed in several studies. Dubois and Fredriksson (2008) suggest that coopetition can be a result of a company's sourcing strategy to improve the efficiency and the innovation capabilities of suppliers to its advantage. The buyer's goal is to improve the efficiency of its supplier base, stimulate innovation and manage supplying cost. Similarly, Wu et al. (2010) show that coopetition can be a deliberate strategy imposed by a buying company onto its suppliers in order to manage them. Furthermore, Wilhelm's (2011) case study in the car manufacturing industry revealed that suppliers could be managed through the active establishment and maintenance of coopetitive relationships.

Relational drivers refer to the notion that companies look for partners (in this case, competitors) that can offer complementary or superior resources and capabilities (Gnyawali & Park 2011). Typically, companies develop a

coopetitive relationship with partners that have distinct and complementary resources. Companies can pursue coopetition to increase their bargaining power and competitive capability by combining their knowledge and resources with those of competitors (Gnyawali & Park, 2009). Further, relational drivers point out one of the reasons why companies collaborate and compete: the structural interdependencies between and among companies in an industry. According to Bengtsson and Kock (2000) such interdependencies can explain why companies engage in coopetition.

Internal drivers relate to a company's motives, goals and objectives that bring about coopetition. Coopetition can be assumed as a coping mechanism to respond to different market challenges, such as technological changes, capacity issues, and project work. Scholars reported that coopetition is used by companies to enter new markets or develop new products (Gnyawali & Park 2009, 2011), manage suppliers (Dubois & Fredriksson 2008; Wilhelm 2011), move higher up in the value chain (Daidj & Jung 2015) and enhance performance (Ritala et al. 2014). Table 3 summarises the drivers of coopetition.

Table 3 - Drivers of coopetition

	External	Relational specific	Internal
Drivers	Industrial characteristics, technological demands and external stakeholders (Luo et al. 2006)	Partners complementary resources and capabilities, goal congruence, and technological asymmetry (Gnyawali et al. 2006; Gurnani et al. 2007)	Companies' specific motives, resources and capabilities (Madhavan et al. 2004)

Adapted from Bengtsson and Raza-Ullah (2016)

The **process**[6] of coopetition is considered an under-researched area, and there is a lack of understanding of what a coopetitive process involves (Bengtsson & Raza-Ullah 2016). Based on the current literature, Bengtsson

[6] It should be noted that this process view of coopetition has no explicit links to broader Organisational Process Theories or Processual Approaches such as the ones discussed in Langley and Tsoukas (2017)

and Raza-Ullah (2016) proposed three main themes to describe the processes of coopetition: dynamic; complex; and challenging. Firstly, the process of coopetition is considered dynamic because coopetitive interactions and relations are often configured and reconfigured (Pathak et al. 2014). Resultingly, companies create new coopetitive ties and exit old ones consistently. For instance, Pellegrin-Boucher et al. (2013) argued that the risk and unpredictability of market evolution, as well as the challenges of globalisation, pushed information and communication technologies companies to reconfigure their collaborative and competitive ties within their supply chain networks. Lastly, the dynamic nature of coopetition results in the interplay between competitive and collaborative firm activities (Bengtsson & Kock 2000).

This 'process' is considered complex for several reasons. One reason is the multiple and often conflicting roles companies play in the supply chain network. Companies can be suppliers, customers and competitors at the same time and these different roles can create ambiguity and conflict in business relationships (Tidström 2014). This ambiguity of roles in the network can have adverse effects on knowledge sharing and knowledge acquisition between partners (Johansson 2012). Another reason relates to the tension arising from one-to-one relationships between direct competitors. Authors define such tension as conflict or competitive tension (Pathak et al. 2014; Tidström 2014). The tension between partners increases the complexity of the relationship and can hinder the pursuit of common goals (Bengtsson & Raza-Ullah 2016). Finally, the process of coopetition is considered challenging because of its complex and dynamic nature (Bengtsson & Raza-Ullah 2016). Table 4 summarises the process of coopetition.

Table 4 - Process of coopetition

	Dynamic	Complex	Challenging
Process	Interdependencies and interactions between firms at firm level tasks, network level objectives and networks governance (Pathak et al. 2014)	Multiple and conflicting roles with other firms and the resulting tensions in the network (Johansson 2012)	Contradictory and interrelated elements of both competition and collaboration, which are difficult to manage (Bengtsson, Raza-Ullah, et al. 2016; Raza-Ullah et al. 2014)

Adapted from (Bengtsson & Raza-Ullah 2016)

In terms of results yielded, coopetition enables companies within a business network to access resources, information and obtain strategic flexibility (Bengtsson et al. 2010; Bengtsson & Kock 2014; Dahl 2014). As well, coopetition has been positively associated with R&D development (Huang & Yu 2011), knowledge creation (Zhang et al. 2010) and knowledge acquisition (Li et al. 2011). Bengtsson and Raza-Ullah (2016) identified four broad outcomes of coopetition:

- Innovation
- Knowledge related
- Firm performance
- Relational

Innovation has been one of the key research areas within coopetition, with numerous authors suggesting that there is a positive relationship between coopetition and innovation (Huang & Yu 2011). Gnyawali and Park (2011) investigated coopetition between large IT companies and showed how coopetition helped firms to address technological challenges and to advance the technological development of their products. Similarly, Park et al. (2014a) and Park et al. (2014b) analysed coopetition in the semiconductor industry and found that a combination of moderate competition and high collaboration

between companies has a positive impact on innovation performance.

There are different opinions on whether coopetition is more effective at driving incremental innovation rather than radical innovation (Ritala & Sainio 2013). Researchers have concluded that coopetition promotes radical and incremental innovation based on different factors. For example, the study by Bouncken et al. (2017) indicated that coopetition has a positive impact on incremental innovation during the pre-launch and launch phases of a new product's development cycle, but has a positive impact on radical innovation during the launch phase only. Yami and Nemeh (2014) suggest that coopetition with multiple partners has a positive effect on radical innovation, whereas coopetition between two partners is more suited for incremental innovation.

Furthermore, the positive impact of coopetition on innovation has been closely related to knowledge sharing and creation between partners. The common view in the literature is that knowledge sharing between partners is a pre-requisite for innovation (Bengtsson & Raza-Ullah 2016). Authors such as Bouncken et al. (2017) and Ritala and Hurmelinna-Laukkanen (2009) argue that knowledge sharing is one of the most beneficial results of a coopetitive relationship, given that knowledge sharing and acquisition enable value creation within an organisation (Song & Lee 2012). Further, Gast et al. (2019) argue that knowledge sharing must be balanced with knowledge protection. Hence, companies should consider the need for a robust inter-organisational knowledge management system to share general and project-specific knowledge with their competitors while protecting core knowledge. In addition, coopetition has been identified as a mechanism to access needed resources and sustain international expansions (Bengtsson & Kock 2014). Finally, "*positive outcomes depend on a focal firm's ability to see how multiple levels affect one another in the overall coopetitive process*" (Bengtsson & Raza-Ullah 2016, p. 32).

Table 5 summarises the outcome of coopetition.

Table 5 - Outcomes of coopetition

	Innovation	Knowledge related	Firm performance	Relational
Outcomes	Enhanced innovation performance through coopetitive arrangements (Huang & Yu 2011)	Knowledge sharing, knowledge creating and knowledge acquisition (Ho & Ganesan 2013; Ritala et al. 2014)	Economic, financial and customer performance (Dubois & Fredriksson 2008; Liu et al. 2014; Luo et al. 2006)	Trust and maintenance of relationships, goal and outcome realisations (Liu et al. 2014)

Adapted from (Bengtsson & Raza-Ullah 2016)

According to Bengtsson and Raza-Ullah (2016) the DPO framework offers a theory of coopetition that blends the Actor School of Thought and the Action School of Thought into a coherent model. External, relational and internal drivers promote the coopetitive processes at an inter-firm, intra-firm and network level. Coopetitive processes happen on numerous levels and influence each other as well as impacting on coopetition outcomes. The authors also suggest the existence of a feedback loop that connects outcomes with processes and processes with drivers.

3.3 Framing Coopetition through Schatzki's Practice Theory

Having reviewed the current coopetition literature and its theoretical underpinnings, it is important to explain how coopetition can be framed through a Schatzkian Practice Theory frame (SPT). This section will present

the key assumptions or 'points of departure' that will frame this study's analysis. Firstly, coopetition is usually conceptualised as something that an organisation does, whether at a network level or an activity level (Bengtsson & Raza-Ullah 2016). Coopetition is described as a phenomenon resulting from organisations interacting in broader business networks or organisations collaborating on specific activities. As well, coopetition is usually analysed through the lens of input-output models, of which the DPO framework is an example (Bengtsson & Raza-Ullah 2016). This is in line with the traditional view of organisations in management studies that focuses on structural characteristics of complexity, formalisation and control as well as organisational processes and activities.

Adopting a SPT perspective implies shifting the focus to practices and materialities and the ways in which practitioners enact these in certain social contexts. Thus, coopetition is not something that an organisation does; it is something that people amid practices of and between organisations do. Like any other social phenomenon, coopetition occurs through the medium of social practices.

Practice perspective on coopetition #1: Coopetition is a social phenomenon and is composed and performed by people as carriers of practices.

Following this reasoning, coopetition can be theorised as happening amid many other business practices that managers and workers carry out every day. In turn, the practices in which coopetition transpire can be identified in the broader range of market practices. For example, coopetition practices may relate to individual economic exchanges such as negotiating prices and selling products or services (Kjellberg & Helgesson 2007).

Practice perspective on coopetition #2: Coopetition transpires from the bundle of business practices.

Coopetition is enacted through practices, which implies collective norms and

institutions as well a socially shared general understandings (Meier et al. 2018). The adoption of a SPT perspective draws attention to the relationships between people and how these relationships are an integral part of coopetition. Coopetition is always tied to the relationships that people forge with each other. Coopetition does not result from relationships between organisations; instead, it is grounded in the practices enacted in social sites between people and their mutual understanding of what constitutes coopetition practices in those sites.

Practice perspective on coopetition #3: Shared understandings of coopetition practices make coopetition activities collective and mutually comprehensible.

According to Practice Theory, social phenomena are not deterministic, given that practices are improvised according to local, practical, and social conjunctures (Schatzki 2002). Because coopetition is bound to local, practical, and social contexts, the specific and unique sites in which coopetition occurs has a profound impact on the way people carry out coopetition. In turn, the social site in which coopetition emerges needs to be taken into consideration when analysing coopetition phenomena.

Practice perspective on coopetition #4: Coopetition reflects the local practices and materialities of the social sites in which it is performed.

Schatzki's Practice Theory argues that humans are neither rational decision makers nor rule following creatures (Schatzki 2002). Rather, people carry out the practices that are most appropriate to them given the situation and their intentions. Schatzki (2002) proposes that human activity is directed by 'practical intelligibility', which is defined as what makes sense to a person to do. This is determined by a person's ends – the projects and tasks that he/she/they are pursuing.

Practice perspective on coopetition #5: Coopetition is one of the possible paths of action that practitioners can enact based on their intentions, goals and

the contextual conditions in which they operate.

According to Schatzki (2002), practices should not be mistaken for routines or standardised actions. One of the key features of practices is their undetermined and open-ended nature. Because of this, practices can show irregular, unique and changing doings and sayings. This idea differs starkly from most of the coopetition research, which defines coopetition as a process based on simultaneous competitive and collaborative routines and standardised actions between workers and managers, stemming from a positivist philosophical approach (Bengtsson et al. 2010; Galkina & Lundgren-Henriksson 2017).

Practice perspective on coopetition #6: Coopetition practices are open-ended and emergent; they are not processes that follow a certain order every single time.

The process approach to coopetition claims that coopetition is developed through the mutual interactions between two or more entities at intra-organisational or inter-organisational levels (Bengtsson et al. 2010). As well, coopetition is defined as a two-level phenomenon that involves one-to-one relationships and the broader network in which these relationships are embedded:

> *The bottom-up processes refer to how a focal firm's aspiration for coopetition, coopetitive mind-set, and coopetitive work environment affect higher level coopetition.(...) Top-down processes indicate the influence of the contextual environment, including the larger network and inter-network levels* (Bengtsson & Raza-Ullah 2016, p. 33).

Such a description reflects a philosophical stance based on a tall ontology that depicts multiple levels of reality as the domain of entities, in which systematic relations of causality or supervenience exist. Thus, this conceptualisation describes coopetition in terms of structures and levels, and assumes higher levels can shape, enable or constrain what occurs in lower levels and vice versa. SPT refutes the idea of systems, wholes, structures or flows and considers

practices as the key element in the constitution of social phenomena (Schatzki 2002). From his perspective, in order to understand coopetition, researchers ought to bring coopetition practices to light and examine how they are connected and emerge as part of wider phenomena (i.e., other practice-order bundles).

Practice perspective on coopetition # 7: Coopetition phenomena are constituted by and emerge as an aggregate of interlinked practices enacted in the social sites of organisations.

Human coexistence transpires as part of the bundles of practices and thus any social phenomenon is a feature or slice of this web (Schatzki 2002). Since organisations are a social phenomenon, they are constituted by bundles of practices and arrangements. This view on organisations diverges substantially from the framing used by other coopetition scholars, who focus on structural characteristics of complexity, formalization, control as well as organisational processes and activities (Chiambaretto & Dumez 2016; Lacam & Salvetat 2017; Pathak et al. 2014; Wilhelm & Sydow 2018). Traditionally, coopetition scholars follow Robbins et al. (2015) in focusing on the structural features of organisations, and describing systemic arrangements of individuals that are designed to accomplish a specific goal (Robbins et al. 2015). For example, scholars such as Dahl (2014) and Bengtsson and Raza-Ullah (2016) follow Weick (1969) in highlighting the processual aspects of coopetition within organisations and define it as ensembles of interrelated actions (Weick 1969). In contrast to the above, this study conceptualises coopetition as a bundle of interrelated practices transpiring amid interconnected material orders (Schatzki 2005, 2006).

In summary, these seven perspectives on coopetition will ground the analysis of coopetition within supply chains and represent 'points of departure' for discussing the empirical findings of this study.

3.4 Chapter Summary

This chapter's aim was to explain the main concepts, assumptions, theoretical frameworks and current research limitations in the field of coopetition. The first section described how the mainstream view in SCM regards collaboration as one of the critical mechanisms of value creation and thus it should be promoted between companies throughout the supply chain. The emphasis on collaborative effort is based on the assumption that companies can improve their performance by pooling resources, capabilities, skills and knowledge (Padula & Dagnino 2007). This approach also assumes that companies have convergent interests and operate through a fully collaborative structure (Padula & Dagnino 2007). While cooperation between companies can be a successful strategy for achieving common goals, it is also a way to pursue private interests. The existence of both competitive and cooperative relationships is generated by companies' endeavours in pursuing private and common interests in their business relationships (Gurnani et al. 2007). The concept of coopetition describes the existence of both competitive and collaboration relationships between companies.

The second section presented the main schools of thought in coopetition research: the Actor School of Thought and the Activity School of Thought. The Actor School of Thought analyses coopetition from a network perspective and assumes that a focal company would cooperate with some companies in the network and compete with others. This means that collaboration and competition are mutually exclusive. Studies within this school of thought have conceptualised business networks a 'systems', focusing the analysis only at a network level. By contrast, the Activity School of Thought focuses on coopetitive relationships at a dyadic rather than at a network level. It argues that companies simultaneously cooperate in some activities but compete in others (Bengtsson & Raza-Ullah 2016). Coopetition is not considered a dichotomic construct where competition and cooperation are mutually independent, with only one element operating at a time (Chen 2008). Instead, coopetition is considered a multidimensional construct, in which competition and cooperative elements occur at once (Bengtsson et al. 2010). This drives the

complexity and contradictory logic of coopetition (Bengtsson, Raza-Ullah, et al. 2016). As a result, the key characteristic of coopetition is the paradoxical nature of its contradictory and yet interrelated elements (Chen 2008; Gnyawali et al. 2006; Raza-Ullah et al. 2014).

The third section discussed the Blended School of Thought, which has been proposed to integrate the main theoretical concepts of coopetition into a coherent model (Bengtsson & Raza-Ullah 2016). This school of thought argues that coopetition is influenced by the relationship between companies as well as the network context in which companies operate. Scholars from the Blended School of Thought have developed a theoretical framework based on three key components: Drivers, Process and Outcomes (DPO). The model *"suggests that drivers at external, relational, and internal levels result in coopetition on the inter-firm, intra-firm, dyadic, triadic, network, and inter-network levels"* (Bengtsson & Raza-Ullah 2016, p. 32). The framework highlights three components of analysis: drivers of coopetition, processes of coopetition and outcomes of coopetition. These three components operate jointly, both at a network level and at a company level. The drivers of coopetition refer to the reasons that push companies to compete and collaborate at the same time – they are usually classified as external, relation-specific and internal.

The last chapter section framed coopetition through the lens of Schatzki's Practice Theory. The author argued that coopetition is not something that an organisation does, but rather something that people do. Hence the focus of coopetition studies should be on people and their actions, rather than abstract organisations. The next chapter will present the methodology used in this study to investigate how coopetition is enacted through social practices.

4 A Qualitative Methodology for Supply Chain Research

This chapter will outline the methodology used in this study. A research methodology deals with how researchers obtain knowledge about the world and refers to the body of methods, procedures, concepts, and rules used to gather, analyse and explain data (Frankel et al. 2005). A fundamental characteristic of this process is transparency, which allows scholars to evaluate the merits of an argument. Thus, researchers ought to present the logic that generated their conclusions and the premises that supported them in a clear and concise way (Ketokivi & Choi 2014). This perspective underpins the aim of this chapter, which is to explain the rationale behind a case study methodology and to provide a thorough description of the data analysis process. The first section will introduce the paradigm that guided the research design and justify the method chosen for this project. The second section will illustrate the settings in which the data collection took place, describe the data collection procedure, and present the data analysis technique employed by the researcher.

4.1 Research Methodology

The choice of methodology is primarily driven by two elements. The first

element is the type of research questions that a study puts forth, and how this should inform the approach of a project (Robson 2002). Eisenhardt (1989) and Yin (2014) stress that qualitative research is best suited for investigating 'how' and 'why' questions. Quantitative research, by contrast, is suitable for investigating 'what', 'how many', 'how much' questions (Yin 2014). The second element is the nature of the phenomena under investigation, specifically the extent of control an investigator has over the study's events, and the degree of focus on contemporary rather than historical events (Yin 2014).

In line with the theoretical discussion presented in Chapter 2, this study will follow an interpretivist epistemological approach regarding research methods. Subjectivism argues that social properties are constructed through people's interactions. According to subjectivism, the social world cannot be explained without taking into account the subjective basis of action (Johnson & Duberley 2010). Meaning is also created as a result of social actors' interactions with each other. Within subjectivism, interpretivist researchers are those who seek to explain how people interpret and make sense of their reality. This approach is also referred to as constructivism, indicating a focus on how the social world is interpreted by the human beings involved in it. As Schwandt (2007) summarises, this approach highlights the experiences and interpretations lived and felt by people acting in social situations.

The research methodology chosen for this project was qualitative and based on a case study methodology. Qualitative research aims to create rich, holistic descriptions, as well as understand complex social phenomena (Miles et al. 2014). Qualitative research does not aim to discover general laws based on cause and effect logics – rather, it aims to reach rich descriptions of symbols, interpretations and shared meaning (Miles et al. 2014). Qualitative research supports an interpretivist epistemology and stresses the importance of context and the need for understanding social phenomena in their settings. Further, it advocates for research analysis that takes into account context, complexity and detail (Creswell & Poth 2018) . The choice of research design then informs the sampling strategy and methods used by the researcher. This choice was dictated by three elements. Firstly, this study's research paradigm is grounded

in a 'site' social ontology. Secondly, the research questions of this study are predominately 'how and why' questions, for which a qualitative methodology is best suited (Eisenhardt 1989; Yin 2014). Lastly, the nature of the phenomena is not under the control of the investigator and focuses on contemporary events. Given this combination of elements, a qualitative research approach was identified as the most appropriate to investigate how coopetition is enacted through practices.

The author chose to use a case study methodology for the study on which this thesis reports. In this context, a case study refers to "*an empirical enquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not evident and in which multiple sources of evidence are used*" (Yin 2003, p. 23). A case study methodology is considered appropriate when investigating a phenomenon "*which is difficult to separate from its context, but necessary to study within it to understand the dynamics involved in the setting*" (Halinen & Törnroos 2005, p. 1286). Researching supply chains presents a series of challenges given that supply chains normally involve more than two actors, which can lead to problems accessing data and huge workloads in data gathering. Further, supply chains show cooperative arrangements between firms but are based on formal and informal agreements rather than legal contracts. Thus, these cooperative actions are difficult to identify. Lastly, supply chains are embedded in different social, spatial, political, technological and industrial structures, making each network unique and context specific (Halinen & Törnroos 2005).

These difficulties arise from the intrinsic nature of supply chains, which entail complex layers of resources and activity links spanning across organisational boundaries. Two major characteristics impact on research methods. Firstly, it is not possible to study 'the' supply chain as a whole, due to the sheer dimension of it. If we were to trace the entire supply chain of a company, we might encounter hundreds of companies connected. As explained by Easton (1995, p. 416), "*one might start with any organisation in the world and trace a path through, via economic exchange links, to any other organisation*". This has critical implications regarding representativeness and inference. Supply

chain studies have used dyads, triads and small nets as sampling units (Choi & Wu 2009). The smaller the unit of analysis, the more the study loses focus on the element of connectedness. The study of large supply chains retains the element of connectedness but limits the research method available and raises issues of representativeness (Easton 1995). Due to the element of connectedness and the different types of activities amongst actors, supply chains are complex and dynamic phenomena (Carter et al. 2015; Choi et al. 2001; Choi & Krause 2006) that are difficult to predict or control (Carter et al. 2015). Accordingly, scholars have argued for the use of case study research in the context of supply chain analysis, to overcome some of these methodological challenges (Halinen & Törnroos 2005).

The data collection was based on a selective and purposeful sampling, which is defined as "*the calculated decision to sample a specific local according to a preconceived but reasonable set of dimensions*" (Glaser 1978, p. 37). Selective sampling is considered a practical necessity for qualitative researcher since they are often constrained by time, research restrictions and access to interviewees (Strauss 1987). Similarly, purposeful sampling aims to select information-rich cases for the purpose of the study (Patton 2002). Furthermore, the case selection was based on a variation strategy (Patton 2002) and included small, medium and large organisations working in a variety of industries. The study bases its analysis on five case studies that represent prototypical examples of organisations in their respective industries (Pettigrew 1990). This design allowed for literal replication of the study results (Yin 2014).

The case study analysis relied on three sources of evidence: semi-structured interviews, direct observations and documentation. Semi-structured interviews provide the advantage of focusing on the case study topics and provide insightful and rich explanations of the cases as well as participants' personal experiences (Yin 2014). The interview format was based on a 'shorter case study interviews' format (Yin 2014) and each ranged from between 40 minutes to just over an hour in length. The interviews were structured through an interview instrument (see Appendix 1). Further, the interview technique

used elements of the 'interview to the double' (ITTD) method proposed by Nicolini (2009a). The ITTD is an interviewing technique that requires interviewees to imagine that somebody will have to cover for them at their job the next day. The interviewee is then asked to provide detailed instructions on how to perform that job (Nicolini 2009a). This interview method was originally developed to allow somebody who is not familiar with a particular context to gain valuable and practical knowledge. The technique can harvest an articulated description of the practices enacted by the study participants without having to gather direct observation or conduct lengthy ethnography studies (Nicolini 2009a). Nonetheless, Nicolini (2009a) advises against using this technique as a standalone data collection method and argues for using it in conjunction with other methods, such as observations. However, the use of the ITTD interviewing technique had to be accommodated to the interviewees' willingness to share in-depth details of their business activities. Most participants did not respond well to this interviewing style and therefore the author had to rely more on semi-structured interview questions.

The case studies also involved collecting documentation as a second source of evidence. Documentation provides an unobtrusive way to collect information (Yin 2014). The documents analysed included companies' official websites as well as companies' flyers and brochures. This information was used to gain an understanding of the industries and business contexts in which the companies operated. The third source of evidence used during the study was based on observation, which helped in covering the cases' contexts (Yin 2014). The observations involved industry meetings attended by the some of the interviewees and organisations' workspaces and were recorded in the researcher's journal. Lastly, since the primary data collection method is centred on semi-structured interviews, the data analysis method was based on coding. According to Saldaña (2009) a code can be defined as a word or short phrase that gives a summative, significant, essence-capturing, and/or evocative attribute for a portion of language based or visual data such an interview transcript.

The inference method was based on abduction, since theory elaboration

considers existing theory as malleable and lends itself to abductive reasoning (Khachab Chihab 2013). According to Ketokivi and Choi (2014, p. 236), "*abductive reasoning involves modifying the logic of the general theory in order to reconcile it with contextual idiosyncrasies*." Abduction as a method of reasoning was originally developed by the philosopher Charles Sanders Peirce as a process of generating an explanatory hypotheses (Peirce 1998). Abduction is a form of inference that offers an alternative to deduction and induction, which are the two basic forms of scientific reasoning. In a similar fashion to other disciplines, deduction represents the dominant form of reasoning in supply chain and logistics studies (Arlbjørn & Halldorsson 2002; Mentzer & Kahn 1995; Näslund 2002).

Abduction starts with the rule and the observation, and seeks to infer the explanation by testing it against the empirical results in light of the rule (Mantere & Ketokivi 2013). Similar to induction, abduction may or may not start with a pre-existing theoretical framework – it can either start with a deviant observation that cannot be explained or the application of an alternative theory to describe a phenomenon (Dubois & Gadde 2002). Nonetheless, the process is based on an iterative dialogue between empirical observations and theory, where the data collection and the theory-building phases overlap in a circular manner (Kovács & Spens 2005). If the theory and the empirical facts align, then it is possible to develop new theories, hypotheses and propositions and apply the conclusions to practice (Eriksson 2015).

The abductive approach focuses on "*the particularities of specific situations that deviate from the general structure of such kinds of situations*" (Kovács & Spens 2005, p. 138), hence it is considered a useful approach to identify which aspects of a phenomenon are generalisable and which others pertain to the specific context of the phenomenon itself (Kovács & Spens 2005). Abductive reasoning is particularly useful for conceptualising a phenomenon through a new theoretical framework. Table 6 summarises the research approach taken during this project.

Table 6 - Research methodology summary

Research component	Research approach
Social Ontology	Site Ontology - there is only one level of social reality
Epistemology	Interpretivist
Theoretical framework	Practice theory
Research objective	Theory elaboration
Research questions	How and why
Research approach	Qualitative
Methodology	Case study
Sampling	Purposeful sampling
Sources of evidence	Semi-structured interviews, direct-observations, documentation
Data analysis	Coding
Inference method	Abduction

4.2 Empirical Settings

4.2.1 Data Collection

The author investigated 21 organisations and recorded 17.5 hours of interviews. The data collection started in September 2016 and finished in November 2017. Soon after the data collection ended and the initial round of coding started, it became clear that the data could be organised into five distinct cases based on:

- The bundles of shared practices and the shared sites in which practitioners carried out coopetition, which could be identified as distinct communities of practitioners.
- The social relationships between practitioners, which provided a picture of how their lives were 'hanging together' through chains of actions and interpersonal structuring.
- The shared sites in which coopetition events took place, the activity-

place spaces where coopetition activities occurred.

The next section will describe the context of each case in greater detail

Case One, Engineering Sites. This case comprises practitioners managing small to medium (SME) engineering firms. *Aluminium*, *Fluido*, *Industrial Equip* and *Material Equip* are SME engineering firms that operate in Business-to-Business markets (B2B). These organisations operate in specialised, niche markets and offer turn-key solutions to their customers. *Aluminium*, *Fluido*, *Industrial Equip* and *Material Equip* operations are organised around job-shop processes[7] and they perform highly customised, made-to-order work. These businesses supply products or services to a wide range of heavy industries including mining, steel, rail and building. Their work is awarded through tender contracts, and the companies often face a variable demand. All companies except *Fluido* employ less than 30 employees. These organisations did not disclose if they were part of the same supply chain. Table 7 presents a summary the organisations investigated in Case One.

Table 7 - Case One organisations

Company fictional name	Size	Type of work
Aluminium	Small	Metal Fabrication
Fluido	Medium	Hydraulics and lubrication systems
Industrial Equip	Medium	Machining and fabrication
Material Equip	Medium	Material handling equipment manufacturing

Case Two, Quality Assurance Sites. This case comprises practitioners specialised in quality assurance and regulations practices. These practitioners work for medium-to-large product and service firms*, Veetro*, *Glass, Plumbing*

[7] Job shop processes are generally organised around multi-purpose equipment and machinery to manufacture customised products. In job shops, customer orders are often processed in batches and are in small quantities (Collier et al. 2016).

and *Certiso*. *Veetro* provides glass repair and replacement services for vehicles as well as residential and commercial buildings. *Glass* manufactures windows and doors for residential and commercial, high-rise buildings and construction markets. It employs more than 2000 people. *Certiso* is a confederation of independent management and consultancy practices that offer quality assurance and certification services such as ISO certification to a broad range of industries. *Plumbing* designs, manufactures and distributes plumbing products for commercial and industrial installations. *Plumbing* has an international presence in New Zealand, South-East Asia and the Middle East and employees 190 people. *Veetro* and *Glass* are part of the same supply chain, whereas *Plumbing* and *Certiso* operate in different industries. Table 8 presents a summary the organisations investigated in Case Two.

Table 8 - Case Two organisations

Company fictional name	Size	Type of work
Certiso	Medium	Certification provider
Glass	Medium	Glass products
Veetro	Medium	Glass products
Plumbing	Medium	Plumbing products

Case Three, Planning and Procurement Sites. This case comprises practitioners working in the procurement and planning department of three large organisations, *Bulkgrain*, *Rail* and *Telem*. *Bulkgrain* is a public company specialised in grain storage, transportation and export. *Rail* is a government-owned rail services provider, and *Telem* is a government-owned telecommunications provider. The companies from Case One operate their business in the metropolitan area of a major city in Australia as well as different locations in the country. *Bulkgrain*, *Rail* and *Telem* operate in different industries and are not part of the same supply chain. Table 9 presents a summary the organisations investigated in Case Three.

Table 9 - Case Three organisations

Company fictional name	Size	Type of work
Bulkgrain	Large	Grain handling
Rail	Large	Rail services
Telem	Large	Telecommunication services

Case Four, Manufacturing Sites. This case comprises practitioners working in a close supply chain in Australia. *Cables* is a small cables and fibre optics company that specialises in civil, construction and mining projects. *Cables* employs less than 20 people and operates through quoted work and tenders. *Maintenance* and *Facility Services* are specialised in engineering solutions and maintenance work for heavy industries such as steelmaking, cement and mining. *Maintenance* is a medium company, whereas *Facility Services* is a large company with more than 100 offices in Australia and New Zealand. *Chem Supplies* is a small branch of a larger corporation specialised in industrial lubricant supplies. *Steel* is a multinational company specialising in steel products and operates a manufacturing facility in Australia. There are many engineering firms that supply services and products to *Steel*, including *Maintenance*, *Facility Services* and *Chem Supplies*, who feed into *Steel*'s supply chain. All the companies from Case Four are part of the same supply chain. Table 10 presents a summary the organisations investigated in Case Four.

Table 10 - Case Four organisations

Company fictional name	Size	Type of work
Cables	Small	Telecommunication cables
Chem Supplies	Large	Industrial lubricants
Facility Services	Large	Industrial maintenance
Maintenance	Medium	Industrial maintenance
Steel	Large	Steel products
Research Centre	Medium	Applied research

Case Five, Social Work Sites. This case focused on practitioners working for four NGOs operating in regional Australia. *Care Services*, *Community Services* and *Family Services* provide direct support related to homecare, family care and children care. *Care Services* provides support to people from cultural and linguistically diverse backgrounds including social support, home support and youth programs. *Community Services* also provides services to multicultural communities. *Family Services* provides support to families at risks through a variety of different specialists. *Community Org* is the peak body for community services in the region. It is a membership-based organisation, and its members provide services and support to older people, people with disabilities, women, children and domestic violence survivors. *Community Org*'s role is to liaise between government levels and NGOs in the area of policy advising and analysis. They also engage with their members through development, training and best practice programs in the social services field. All the companies from Case Five are part of the same supply chain. Table 11 presents a summary the organisations investigated in Case Five.

Table 11 - Case Five organisations

Company fictional name	Size	Type of work
Care Services	Medium	Care services
Community Org	Medium	Community services
Community Services	Medium	Community services
Family Services	Small	Family services

The data was collected through semi-structured interviews. Semi-structured interviews allow the researcher to pursue a consistent line of enquiry while at the same time allowing for open-ended questions (Yin 2003). This interviewing technique lets the researcher work flexibly with the participants' responses and to improvise if necessary. As Stuart et al. (2002) point out, during an interview, the researcher needs to accommodate the interviewee in what he/she/they want to talk about but also ensure that the conversation

leads to the discovery of useful data. During the data collection phase, the author used a semi-structured interview instrument form (see Appendix 1) to guide the interview. Following the interviews, however, the author also followed interesting lines of enquiry emerging through the conversations, in line with Marshall and Rossman's (2016) suggestion to let participants' perspective unfold as they discuss it with the researcher. Notes were taken during each interview to be used during the data analysis phase.

For every sampled case, semi-structured interviews with senior managers were conducted. Interviews took place on site, via phone or in public spaces and lasted from 30 minutes to approximately one hour. Unclear answers were clarified immediately during or after the interview, however interview participant *Matt*, was asked to participate in a second interview. In some cases, participants were asked to introduce other potential participants. All interviews were conducted in English and audio recorded on the researcher's mobile phone. Notes were taken for each interview and stored in the researcher's notebook and computer. All the interviews were stored and transcribed using the qualitative research software Nvivo11. The interview with *Carol* was counted twice as the person held a previous role in another sampled organisation. Table 12 shows the study participants and the details of the interview.

Table 12 - Study participants and details of interviews

Pseudonym	Role	Company	Interview medium	Additional data sources	Case
Anna	Procurement Manager	Steel	Face to face	Documents	4
Bob	Branch Manager	Fluido	Phone	Industry meeting observations	1
Brett	Business Development Manager	Industrial Equip	Face to face	Organisation's site observation and industry meeting observations, documents	1
Carol	Ex-Chief Procurement Officer	Steel	Face to face	Documents and industry meeting observations	4
Carol	Chief Procurement Officer	Telem	Face to face	Documents	3
Charles	Chief Executive Officer	Community Services	Face to face	Organisation's site observation	5
Dane	Quality Manager Industry Standard Committee Member	Veetro	Face to face		2
David	Ex-Commercial Manager	Maintenance	Face to face	Industry meeting observations	4
Drew	Managing Director	Aluminium	Face to face	Organisation's site observation and industry meeting observations	1
Edward	Sales Manager	Plumbing	Phone	Documents	2
George	Chief Executive Officer	Family services	Face to face	Documents	5
James	Research and Development Manager	Plumbing	Face to face	Documents	2
Jane	Ex-Chief Executive Officer	Family services	Face to face		5
Jason	Project Manager	Facility services	Face to face	Organisation's site observation and industry meeting observations	4
Leo	Group Assurance Manager Industry Standard Committee Vice-Chair	Certiso	Phone	Documents	2

Lucy	Project Manager	Care Services	Face to face	Organisation’s site observation	5
Martin	General Manager	Cables	Face to face	Organisation’s site observation	4
Matt	Logistics Planning Manager	Bulkgrain	Face to face	Documents	3
Natalie	Chief Executive Officer	Community Org	Face to face	Organisation’s site observation and documents	5
Nick	Quality and Regulatory Affairs Manager	Plumbing	Face to face	Organisation’s site observations and industry meeting observations	2
Paul	Managing Director	Material Equip	Face to face	Organisation’s site observation and industry meeting observations	1
Peter	Director	Research Centre	Face to face	Organisation’s site observation	4
Sam	Chief Procurement Officer	Rail	Face to face	Organisation’s site observation	3
Sean	Sales Engineering Project Manager & Product Manager	Chem Supplies	Face to face		4
Will	Ex-General Manager &Industry Association Secretary	Glass	Face to face		2

The author also took part in three industry meetings in which the case companies' managers discussed incoming project and business opportunities. The first meeting attended was in a regional city in Australia that gathered around 50 managers and business owners from the area to discuss business development opportunities. The event is regularly organised by an industry association with more than 200 members working in the manufacturing, engineering and special services sectors. The meeting focused on mining projects in the region and the latest updates about project timelines, budgets and profit forecast. *Bob* from *Fluido* was one of the attendees.

The second meeting attended took place in an Australian capital city and gathered about 30 managers and business owners from the inner city. The event is organised by an industry association with the main focus being to promote business opportunities and foster collaboration between members on large manufacturing projects. *Paul* from *Material Equip*., *Drew* from *Aluminium*, *Brett* from *Industrial Equip*, and *Nick* from *Plumbing* are members of this industry group and attended the meeting. During this meeting, a selected panel of members presented the latest projects they were working on and called for possible partners to put forward an expression of interest for those projects.

The third meeting attended took place in the regional city in which *Steel's* manufacturing plant is based. The meeting was organised by the local industry association and drew managers and business owners from the region. The main purpose of this association is to search for new market opportunities for its members and to encourage members to combine their resources, in order to work on large scale manufacturing projects. During the meeting, senior representatives from *Steel* presented the annual financial results of the company and described their organisation's business plan. This meeting had a particular relevance given that a large number of the group members are part of *Steel*'s supply chain. Lastly, companies' websites and available documents were reviewed to gather information on each company and to create a profile for each case.

4.2.2 Data Analysis

The data analysis entailed six phases and employed a range of coding and data mapping techniques. NVivo 11 was used for the thematic analysis. The first round of analysis was based on 'elemental coding' methods as described by Saldaña (2009) and produced 252 codes. The methods employed were:

- Structural coding
- Descriptive coding
- Process coding
- Provisional coding
- Simultaneous coding

Structural coding assigns a content-based or conceptual phrase representing a topic of analysis to a segment of the data. This enables the researcher to both code and categorise the data (Saldaña 2009). For example, one area of enquiry for this project related to the existence of mutual interests between companies and their impact on coopetition. As a result, some of the structural codes inspired by this concept were: '*common interests*', '*interdependencies*', and '*intersecting interests*'. Descriptive coding also creates basic labels for the data (Saldaña 2009). Descriptive codes such as '*customer requirements*', '*design work*' and '*tendering work*' were created to describe the data in a factual manner. Process coding labels human activities and general actions and uses gerunds to create codes (Saldaña 2009). Some examples of process codes from the first round of analysis include codes such as: '*managing coopetition*', '*setting rules*', and '*talking together*'.

Provisional codes are codes generated by the researcher prior to the data analysis process, which are based on the preparatory work that he/she/they conducted before the data collection phase. Miles et al. (2014) argues that provisional codes are appropriate for studies that build on previous research. The provisional codes used during the first coding cycle reflected the Practice Theory themes and concepts presented in the literature review and were: '*motivations', 'relationships', 'outcomes', 'context', 'activities', 'strategies',*

'practices', 'rules', 'objects', 'knowledge', 'structure', 'issues', and *'events'*. In some instances, the data segments were given two or more different codes, as the data's content presented multiple meanings that required more than one code (Miles et al. 2014).

Following the first round, the coding categories were progressively narrowed from broad categories to key themes using second cycle coding techniques. Two consecutive rounds of coding were conducted using 'second cycle coding' methods. These reorganised and re-analysed the data and codes created during the first round. The aim of this process was to fit coding categories with one another in order to develop a coherent description of the data (Saldaña 2009).

Three main coding techniques were employed:

- Pattern coding
- Focus coding
- Axial coding

Pattern coding categorises data identified under similar codes; it organises data under the main category while attributing meaning to that particular organisation. For example, many interviewees talked about how coopetition led their organisations to carry less inventory, increase capacity and have better access to customers. Thus, it was possible to assemble a code named '*benefits of coopetition*' to describe this pattern. Focus coding selects and groups the most significant codes created in the first coding round. According to Charmaz (2006, p. 46) it "*requires decisions about which initial codes make the most analytic sense*". For instance, all process codes created to describe the activities performed to manage coopetition were grouped under the code '*managing'*. Axial coding reassembles data that was split during the first coding cycle and relates data categories to their respective subcategories, specifying dimensions and characteristics of each main category (Charmaz 2006). For example, the code '*collaboration*' was split between '*strong*' and '*weak*' to describe the different type of collaborative relations between companies. At the end of the third round of coding, the data was categorised into 30 'parent nodes' that represented the key themes within the data set.

Analytical memos were created for each interview to reflect on the patterns and categories that emerged during the data analysis (Bazeley & Jackson 2013; Saldaña 2009). The memos also helped to highlight the links and connections between codes, themes and similarities between the five cases. Table 13 shows an example of the theoretical memos created by the author during the research.

Table 13 - Interview analysis memo

Interview Analysis		**Name:** Dane
		Company/industry: VEETRO, Glass products
		Date: 11/08/2017
Context: • Glass products • Certification bodies • Service providers, certifications, standards and courses		
Coding notes: The first thing that comes to mind about Dane's interview is how certification bodies would collaborate to set up the acceptable practices in the market. They would agree upon the set of rules that would work for anybody and then compete fiercely in the market. Dane also mentions how different divisions of his company would provide different services and hence required specific suppliers, some of which might have also been competitors. This suggests that companies can have interactions with competitors because companies can have multiple roles. However, this does not imply we can define this as coopetition as yet. Another interesting fact is that Dane repeats many times there was no cooperation on prices and that pricing information was never shared. This confirms talks and meetings focused on technical issues and standards (the backend of the business) rather than the front end (marketing and sales).		
Summary: • Confirms that companies can have multiple roles • Presents a case where companies collaborate to set up the rules of the game • Dismisses collusion and price fixing as a reason for pursuing coopetition		

The fourth coding cycle re-organised the data and themes using some of the

DPO framework concepts. This coding exercise aimed to merge overlapping codes and explore the different concepts within each category of the DPO framework. This exercise allowed the researcher to focus on the contextual aspects of the data and relate it to previous findings in the literature. After the coding cycle was completed, the fourth coding structure was reproduced in a tangible operational diagram (Strauss 1987). During this round of coding, the five cases were compared with each other, to identify similar and contrasting themes in the data set.

The fifth round of coding focused on analysing the data through the lens of Practice Theory. The previous coding structure created using the DPO macro categories was re-modelled through a Practice Theory framework. The last round of coding produced five key topics. Firstly, it focused on the site in which the interviewees operated; the social site in which they had to act and make choices about their businesses. This conceptual category was eventually split into two sub-codes — constraints and possibilities — to consider the limitations faced by practitioners as well as the possible paths of action they could choose when managing their supply chains. The second macro category identified was activities, which considered the importance of human subjectivity and agency. The third macro category was affordance, which described the context offered to the people. A fourth macro category was defined as the range of practices being described. This category focused on the practices identified during the interviews. The fifth macro category was related to outcomes, which highlighted the end results of coopetition described by participants.

The sixth and last round of coding performed a more granular analysis of the practices identified in the previous round. The analysis focused on identifying the general understandings, practical understandings, rules and teleoaffective structures that shaped coopetition practices. The analysis also focused on exploring the concept of affordance and linking it to the notions of practice prefiguration and practice emergence.

4.3 Ethical Considerations

This research project was conducted in accordance with the values and guidelines of the *National Statement on Ethical Conduct in Research Involving Humans* (Council 2018) and was approved by *The Human Research Ethics Committee* (Wollongong 2018) of the University of Wollongong on the 15 November 2016 (ethics number 2016/308). In line with the ethics guidelines of this study, each interviewee provided consent to participate in the interview by signing the '*Study Consent Form*' (see Appendix 2). Each interviewee was also given a copy of the '*Participant Information Sheet*' for his/her reference (see Appendix 3). The information was kept secure and confidential on an electronic file on the author's university computer. Access to the data was restricted to the student, the principal and the co-supervisors. Participants' identity and organisations' details were de-identified in the transcripts. Personal and business names were referred to through pseudonyms in the author's writing.

4.4 Chapter Summary

This chapter's aim was to clarify the rationale for using a case study methodology and to illustrate the data analysis process. The choice of a case study methodology was motivated by three elements. Firstly, the research paradigm is grounded in a Schatzkian 'site' ontology and an interpretivist epistemology. Secondly, the research questions guiding this study are 'how and why' questions, for which a qualitative methodology is best suited (Eisenhardt 1989; Yin 2014). Lastly, the nature of the phenomena is not under control of the investigator, and it focuses on contemporary events.

The case study evidence was based on three sources of evidence: semi-structured interviews; direct-observations; and documentation. The interview technique was inspired by the 'interview to the double' (ITTD) method proposed by Nicolini (2009a), which allows somebody who is not familiar with

a particular context to gain valuable and practical knowledge. Importantly, this technique allows a researcher to gain an articulated description of the practices enacted by the study participants without having to gather direct observation or conduct lengthy ethnography studies.

As has been outlined, the author conducted five case studies, analysed 21 organisations and recorded 17.5 hours of interviews. The interviews were transcribed and analysed through a range of coding and data mapping techniques. NVivo 11 was used throughout the thematic analysis. The first round of analysis used 'elemental coding' methods based around structural coding, descriptive coding, process coding, provisional coding and simultaneous coding. After the first round, the categories were progressively narrowed to create key themes through second cycle coding techniques, which included pattern coding, focus coding, and axial coding. The fifth round of coding produced five key topics that described the macro dimensions emerging from the data set. These dimensions related to the context in which interviewees acted and made choices about their businesses, the activities they performed, the affordances that the context offered these people, the practices identified during the interviews, and the outcomes described by participants as a result of coopetition. The last round of coding applied a more detailed level of analysis to investigate the elements that characterised the practices in which coopetition transpired.

5 Research Findings

This chapter presents the research findings of the five cases investigated. The presentation of results will follow the order of the research sub-questions, which are:

- *Amid which practice-order bundles is coopetition performed?*
- *How is coopetition prefigured in the bundle of practices and orders? How does it emerge?*
- *Which practice elements characterise the practices in which coopetition is present (or not)?*

The chapter has been divided into six sections. The first five sections will present the individual cases investigated during this study. Each section will briefly introduce the case context and then examine the practices in which coopetition is present. Case studies will address all three sub-research questions. The last section of the chapter will present a summary of the findings and discuss the common themes found in each case.

5.1 Case One, Engineering Sites

Aluminium, *Fluido*, *Industrial Equip* and *Material Equip* are small engineering companies that specialise in project work. *Fluido* and *Material Equip* are also official dealers of engineering components. These companies are based in industrial districts within a metropolitan area. Except for *Fluido*, the researcher was allowed to access these companies' premises.

5.1.1 Case One, amid which practice-order bundles is coopetition performed?

The orders through which *Aluminium*, *Industrial Equip* and *Material Equip* carry out their projects, tasks and actions are very similar. Workspaces are separated into two levels – blue-collar workers and machines are at the ground level, while offices and white-collar employees are on the first level. Each office room on the first level has multiple workstations consisting of a desk, a telephone and a computer.

Office workers are dressed in smart-casual attire and those employed in the workshops wear high-visibility and safety gear, a common **rule** structuring industrial work practices. The senior managers' clothes are more in line with a manufacturing workshop attire than that of a corporate setting, as none of them wear suits. Instead, most of white-collar employees wear safety boots and sturdy cotton shirts with their companies' logo visible on the front. The clothing attire and the lack of clear distinctions between blue collar and white-collar workers reflect **general understandings** permeating these sites. There is a sense of craftsmanship, and proudness in the design and quality of the products made. Overall, these spaces resemble artisanal workshops where craft and skills are essential. This contrasts these workspaces from factory production lines where blue collar workers repeat the same task over and over. Pride in work and craftmanship is demonstrated in other ways too. Some companies keep displays of their products in the top offices. For example, before starting the interview, Brett — the manager from *Industrial Equipment* — pointed out the 3D printed parts his company had developed and printed in-house. There is also a sense of humbleness imbuing the office spaces of these companies. The offices look modest but efficient. There is little marketing material on display, giving the impression that these companies focus more on manufacturing quality products than on marketing campaigns.

The interviews took place on the second level of these companies' premises. All these levels have windows that look down into the workshops so that managers can observe employees at work. As is customary for many industrial sites,

yellow lines delimit safety corridors where employees are meant to walk. All workshop equipment is kept on the ground floor. Each of the machines allow workers to perform different projects and tasks, and are also flexible – skilled workers can set them up to perform a variety of operations. The companies' work floors are arranged through a job shop layout, where different tools and machines are grouped together, enabling workers to switch easily between machines.

> *Basically, we do large machining, primarily CNC, big milling, boring, big valves and we've got a fabrication workshop to complement that (…) more recently we've moved into five axis machines, which we describe as advanced manufacturing*. (Brett, Business Development Manager, Industrial Equip)

The goods receiving and storing area are quite small. None of the companies have a great deal of warehousing space, which requires them to keep inventory levels at minimum. Also, these SMEs tend to have a streamlined supplier base of three or four trusted suppliers for raw materials, such as aluminium or steel.

> *Space is quite limited. We are in the process of adapting our wrecking for storage. The call I just had before was for an electric reach truck so we can create more storage space and a lot of that is to do with getting material off the floor as well, to be more efficient in the workplace.* (Drew, Managing Director, Aluminium)

All companies manufacture products from raw materials to finish, performing multiple production steps in-house. Manufacturing is a practice-order bundle in which multiple practices intersect. Tendering represents a key practice in this bundle as these SMEs work on a project basis for which contracts are awarded via tendering. Tenders are formalised and can include up to 15 competitors for the larger projects. Tenders for smaller projects might include up to four companies bidding against each other to secure the job. Demand for these companies' services is irregular and unpredictable. Examples of doings and sayings associated with tendering practices include reading a tender

document, understanding the tender requirements, calculating the number of workers required for the project, and speaking to other managers about the potential project.

> *So, we might get something like a large steel maker, which would be [a] very formalized tender and you would be up against 15-16 companies each time compared to… we might be doing work for a small company, same size of ourselves and probably there is a lot more closer interaction there, there might be one or two companies quoting against you.* (Brett, Business Development Manager, Industrial Equip)

If a tender is successful, a contract is put in place. The contract is carried out through several practices, which include designing, prototyping and manufacturing practices. All of these practices are carried out based on the orders described above, which include heavy machinery, tools, raw materials, office desks, computers and IT equipment. Examples of the doings and sayings employees and managers carry out when performing these practices are: drawing a design with a computer software; looking at prototype images on a computer screen; creating a bill of material for a production job; talking to colleagues about a scheduled production job; turning knobs to adjust a machine's setting; and dropping raw materials on the workshop floor. The **practical understandings** involved in this manufacturing environment reflect the complexity of the projects and tasks being carried out. Given that projects tend to be 'one-of-a-kind' and highly customised, to complete projects, managers and workers need to have and enact specialised skills and knowledges and have access to tools and machinery.

In summary, each of these SMEs embrace similar orders that encompass offices rooms, technological arrays, heavy machinery, tools and production floors. Amid these orders, different but interwoven practices are carried out, for example: tendering practices, logistics practices, manufacturing practices and general business administration practices. These order-practice bundles sustain the highly skilled, bespoke work performed by practitioners within these organisations. The next section will present how coopetition is

prefigured within the practice-order bundles described above.

5.1.2 Case One, how is coopetition prefigured in the bundle of practices and orders? How does it emerge?

During the interviews, it quickly became apparent that *Aluminium*, *Fluido*, *Industrial Equip* and *Material Equip* engage in coopetition regularly. Practitioners are usually faced with two issues when bidding for a tender. The first issue is that most projects require a complex set of practical understandings in order to be completed. Yet these SMEs may possess only elements of the **practical understandings** to perform projects and tasks specific to certain engineering areas. Thus, they might not have the material tools and practical skills to manufacture a product from start to finish. The second issue revolves around capacity constraints. These companies are relatively small and cannot tackle most projects on their own due to lack of workforce and production capacity. As a result, practitioners choose to collaborate with other organisations and work on sections of projects that match their expertise and their capacity.

> *The way I view collaboration* [is] *if there is a project where I would need multiple suppliers to complete the project, I would possibly converse with all suppliers saying you three or two are required to help me with this project, so be mindful you all need to be on board together*. (Drew, Managing Director, Aluminium)

The practical understandings and **materiality arrangements** needed to deliver a particular project **prefigure** possible paths of action. When faced with the issue of not having enough capacity or the right skills to complete a job, practitioners would consider reaching out to a competitor as a solution that makes logical sense:

> *We might say to them* [that] *we can design the robot gripper head; we've got better experience at designing the robot gripper even though they are*

supplying the robot and they might say 'no, we want to still design that. We understand that you guys have got good capabilities in that, but we want the robot to be wholly ours'. (Paul, Managing Director, Material Equip)

Coopetition allows practitioners to expand their business capacity without having to pay any extra costs that would negatively impact the **ends and goals** of other business practices such as business continuity and reliability:

I think the advantage is [that] the capacity growth you could get also gives you a level of certainty if something happened to a piece of our equipment. For example, I've got this good collaborative relationship [and] if something happened to a piece of my equipment, I can comfortably go to and say, 'I'm stuck, can you help me out?' So that's another good advantage. And that gives me continuity of supply even for my own project. (Drew, Managing Director, Aluminium)

This applies to a variety of aspects including, manufacturing workers, sales force personnel and machinery: *"By collaborating with another organisation you suddenly increase your sales force, so you've got sales people out there that aren't costing you anything"* (Paul, Managing Director, Material Equip).

Further, practitioners use coopetition to increase their revenue streams and increase the chances of winning (or participating in) a work contract, thus enabling the ends and projects of business development practices, such as generating revenues. Practitioners partner with competitors that have complementary capabilities and match the capabilities required for the project. Collaboration takes various forms, including supplying under favourable terms, outsourcing a part of a project or directly collaborating in a project.

There is an instance right now, this large tender that is due at the end of the month. Now we can supply pretty much 80 per cent of it without having to go with a competitor but there is a certain quantity of it that

we're going to need our competitors to supply [...] on the flip side from their point of view, they can supply 20 per cent of it but they need to us or others to supply for the other 80 per cent. (Bob, Branch Manager, Fluido)

Personal and business relationships between practitioners play an essential role in supporting collaboration. In particular, the knowledge of the competitors' capabilities and quality of their work is an important factor when selecting partners.

Practitioners did not report any pressure to engage in coopetition from their clients. Occasionally, their clients may request that these companies work alongside a competitor in certain projects. This choice is based on utilising each supplier's specific capabilities on different engineering areas such as laser cutting, moulding or paint coating. In other instances, customers might require a particular component to be used for a project that is supplied by one of their competitors. Regardless, the level of collaboration required by the customers for these arrangements is minimal, and relationships are handled via formal contracts.

It makes great business sense to us to team up with another company who might be a competitor [...] if they have a very strong track record in that particular field, why wouldn't we team up with them? Okay, if the job is worth a million dollars outright our section might be worth $300,000, I'd rather win that $300,000 worth of work than nothing at all. (Paul, Managing Director, Material Equip)

In this particular site, competitors work through the medium of existing practices to perform coopetition, such as sub-contracting and tendering. Practices in which coopetition transpired are **prefigured** rather than emerging. Thus, the practice structure of practices in which coopetition is present, is embedded within well-established practice **rules** (e.g., how to follow contract rules) and **general understandings** (e.g., a sense of commitment to a project). In these instances, the leading company carries the

risk of the project and defines the project time frames and deliverables.

> *We're securing the order and we basically get on with a sub-contractor. Yes we have a formal agreement and formal purchase order, time frames stipulated and technical specifications, you've got [to] have [it] like that, so it's clearly defined.* (Brett, Business Development Manager, Industrial Equip)

Coopetition also spills into neighbouring practices such as those related to networking, which are important for discussing business opportunities and plans.

> *The managers of the business all get together and you'll have lunch or a cup of coffee and you sort of say how it's crazy that we are competing against each other on this job [...] you hear you're eventual collaborative partner is going to bid on it and you know that you need their equipment and they know that they need your equipment and so it just makes sense to have that discussion.* (Paul, Managing Director, Material Equip)

Relationships are kept informal to allow for flexibility. As mentioned previously, customers may require companies to work with certain suppliers and therefore having partnering agreements based on exclusivity could reduce the number of business opportunities. By keeping partnering relationships informal, practitioners can pursue multiple relationships with different suppliers specialised in similar areas of work and choose whichever supplier is suited for a project.

In sum, in these sites coopetition is **prefigured** within the existing practice-order bundles, which in turn influence the practitioners' openness to collaborate with other organisations, including competitors. The lack of material tools and practical skills to manufacture a product from start to finish and the capacity constraints faced by these practitioners was shown to qualify coopetition as a feasible course of action to generate revenues and win work contracts. The next section will discuss the practice elements that characterise

the practices in which coopetition is present.

5.1.3 Case One, which practice elements characterise the practices in which coopetition is present (or not)?

There are several ends pursued by the practitioners of these SMEs, such as making their business profitable, securing a steady supply of work and projects, providing quality products for clients, and designing and developing ingenious solutions. The goals and ends of the SME managers when performing coopetition are, however, mainly related to capacity and revenues.

Within these sites, coopetition transpires from four major bundles of practices: procuring practices, tendering practices, sub-contracting and project management practices. The first practice bundle in which coopetition was mentioned during the interviews was procuring. Coopetition happens within procuring practices when one company supplies or procures parts from a direct competitor. Although collaboration in this instance is minimal, practitioners tend to act respectfully with each other, knowing they may need to purchase components from a competitor to fulfil a customer's order.

> *One of our customers might specify that they want us to provide a particular brand [of] product, but we are not necessarily a distributor for that and so what we end up doing is we end up purchasing from our competitor those goods and they do the same thing with us*. (Bob, Branch Manager, Fluido)

This aspect of coopetition does not interweave with other practices as far as the interviewees reported. Whether they were procuring from a competitor or supplying from a competitor, practitioners performed those projects and tasks without changing the usual practice organisational structure. Purchasing is still performed through doings and sayings such as selecting part numbers and quantities, ordering and paying invoices, sending emails and making calls to suppliers. In this instance, then, coopetition does not seem to spill into other

business practices. The fact that a company purchases components from a competitor does not change the structure of the purchasing practice itself nor its tasks. Purchasing practices still require the practical understandings related to knowing how to raise a purchase order, process an electronic payment to a supplier, and the general understandings all businesses need in order to purchase goods and services and operate in the market. The ends and goals of the practice remained unchanged too; practitioners purchase goods from competitors to replenish their inventory levels.

Tendering, sub-contracting and managing projects are major practices associated with coopetition. There are two points to be made about these practice-order bundles. The first point is that projects and tasks in which coopetition emerges within these practices, are normalised and accepted*: "I think it is an understood thing right throughout the industry, it's industry practice"* (Brett, Business Development Manager, Industrial Equip).

The second point is that the chains of actions performed in these tendering, sub-contracting and managing practices vary depending on whether companies collaborate with a competitor before or after a tender. In this instance, practices can be seen as working in sequence, first through the tendering and then following the other practices. Further, the decision to collaborate before or after a tender impact on the type of activities and practices performed with competitors. Before bidding for a tender, practitioners decide whether a project can be done with or without other partners. Practitioners give themselves a rule when assessing a tender – if they can do the job by themselves, they will try to win the tender on their own, otherwise they might consider partnering with another organisation. If the project requires partnering with other organisations, practitioners have two choices. These two choices present two slightly different sequences of practices. The first is to bid for the tender independently, and the second is to prepare a joint bid. These result into two disparate enactments of coopetition.

The first kind of **enactment of coopetition** is done by bidding for the tender, winning the project and sub-contracting part of the work to a sub-

contractor. In this enactment, the main end for practitioners is to maximise their profit by ensuring the company can win a tender on their own. Collaborating with a competitor after a tender is won is performed through well-known sub-contracting practices in which a section of a project is assigned to a competitor. Practitioners share only non-commercial information and are cautious of not disclosing any sensitive material that could give away trade secrets, which relates to the main practitioners' end to run a profitable business. The inter-company interactions between managers and workers tend to be minimal.

Firstly, the leading company collects all pricing information to present a quote to the client. If the bid is successful, the lead bidder assigns sections of a job to the other partners. Resorting to a competitor is a viable strategy to ensure that there are enough resources to deliver the project on time and meet the client's requests. Further, since competitors are well-known, there is a high degree of trust in their capabilities.

> *Local sheet metal company, quite a bit larger than us that has predominately the same sort of equipment [...] I contacted them, and I said, look, can you do some laser cutting for us, ours is out? 'Sure, send up what you've got, tells us what price, we'll quote and invoice you for the price*. (Drew, Managing Director, Aluminium)

The degree of collaboration for after-tender arrangements is, nevertheless, quite low. Although practitioners discuss projects together, the discussion is centred on planning and organising technical aspects of the job only: *"We'll go and get a price from company A, B, C and put together as part of our tender and I'm sure it's the same model for a lot of other companies"* (Brett, Business Development Manager, Industrial Equip).

The second kind of **enactment of coopetition** is to prepare a joint bid with a competitor. In this case, practitioners assess a tender's requirements first and consider their own company's capabilities to respond to it. If they conclude that they cannot bid successfully for the tender, they may start evaluating

possible partners. Informal discussions with possible partners would follow later.

> *We'll quote to them, and they'll bid as the lead, they'll quote to us, and we'll bid as the lead. Or we'll quote to each other with the view [that] it's open who should have led it and we'll both put our prices in with the promise that we'll source the relevant equipment from the other party if we are successful* (Paul, Managing Director, Material Equip).

Collaborating with competitors before a tender requires a joint decision-making process. Teams from different companies must collaborate to design and manufacture various components of the final product. Collaborating with competitors allows practitioners to leverage their companies' capabilities and strengths.

Customers might also have a specific perception of the nature of the project and influence companies' strategy to win a tender. For instance, a client might perceive a particular project as being a mechanical engineering project, therefore they would seek to contract a company specialised in that field. Practitioners would then have open discussions to decide which one would be perceived by the customer as an organisation with the right capabilities to deliver the goods or service. Collaborative projects are often initiated informally through talks between senior managers. As explained by Paul, the Managing Director of *Material Equipment*, the recognition of mutual dependency between organisations drives the need for collaboration: *"You know that you need their equipment, and they know that they need your equipment and so it just makes sense to have that discussion"* (Paul, Managing Director, Material Equip).

In the case of *Material Equip,* coopetition transpires from project management practices. Collaboration takes place between *Material Equip* teams and competitors' teams – for instance, the sales teams manage the preparation of the scope of work and the final quote. The scope of work also includes deliverables, time frames and deadlines for the project as well as who

oversees specific activities, such as design or manufacturing. The engineering teams are also involved to review the scope of work and provide technical advice and consultancy to the sales teams. Communication occurs via phone or email. If the project is successful, a project engineer is appointed to lead the project. The different teams collaborate to meet deadlines together. This collaboration includes other activities including meetings and site inspections.

This type of collaboration is performed on a project-by-project basis and can be defined as project oriented. Separating teams can also be a strategy to manage potential tensions in the project that could harm the relationship.

> *Generally, it would be the three teams within our companies that would collaborate [with a competitor. It] would be the sales team usually up front to find out in both direction what the scope of work is and what either organization is going to quote or provide the scope for*. (Paul, Managing Director, Material Equip).

Accounting disputes appear to be a cause of tension between companies and are usually resolved through informal rules such as delegating the finance teams to this matter. This allows other teams involved in the project to focus only on their work, avoiding potential delays or tensions that could hinder the overall progress, which usually revolves around payments and invoices.

5.1.4 Case One Summary

The interviews with the practitioners from Case One sites revealed a number of key findings. Firstly, practical understandings and the materiality of engineering practices influenced the managers' attitudes towards collaboration and competition. The companies' capacity constraints and specialised engineering capabilities prohibited these firms from being able to compete for most of their clients' projects from end to end. Hence, coopetition was found to be a viable path for overcoming these limitations and securing work. Projects and tasks related to collaborating with a competitor were accepted within the industry. Further, practitioners' ends and goals when

enacting coopetition were to increase the company's capacity and increase the revenue flow for their company. Lastly, coopetition transpired from the bundle of tendering practices, project management practices and sub-contracting practices.

5.2 Case Two, Quality Assurance Sites

Plumbing, *Veetro*, *Glass* and *Certiso* are medium-size companies. *Plumbing* manufactures and distributes plumbing products for commercial and industrial uses. *Veetro* offers glass repair and replacement services for automotive vehicles and buildings. *Glass* manufactures windows and doors for residential, commercial, high-rise and construction buildings. *Certiso* is a confederation of management consultancy companies that offer assurance and certification services[8] for ISO standards. Unfortunately, the researcher was not granted access to the companies' sites. Thus, it was not possible to observe in person the orders amid these companies' business practices transpired, and to overcome this limitation additional data was sourced through documentation, interviewees' descriptions and respective company website analysis.

5.2.1 Case Two, amid which practice-order bundles is coopetition performed?

The practitioners interviewed for Case Two shared similar quality management roles in their respective organisations. Although *Plumbing*, *Veetro*, *Glass* and *Certiso* belong to different industries, practices related to quality and industry standards played a key role in projects and tasks for these organisations.

The *Certiso* and *Veetro* managers are part of the same industry standards organisation, and the two managers know each other. *Veetro* and *Glass* managers also know one another and have collaborated together through glass standards organisations. *Plumbing* operates in a different industry; thus, the QA manager does not work with the other managers on standards, and he does not know them. Nevertheless, the quality management practices described by *Plumbing*'s QA manager resembles those of the other practitioners and would

[8] The researcher was not granted access to these companies' premises and thus it was not possible to observe the companies' work sites.

be recognised by the other QA practitioners as quality management practices.

Being competitors in the same area of business, *Veetro* and *Glass* share similar **orders** typical of the glass making industry. The manufacturing, safety and the end products for these companies need to adhere to industry standards. Unsurprisingly these organisations' premises are also similarly configured to include office spaces as well as warehousing areas and shopfloors. The three-meter-by-six-meter sheets of glass used to make windows and commercial glass are kept upright and stored on metal racks padded with cushioning material. To move the glass from the storing area to the shopfloor, sheets are strapped with special harnesses and moved to different locations with the help of ceiling-mounted cranes. The glass is then positioned horizontally onto a wide conveyer belt by glazing vacuum lifters (robots equipped with suction cups). The conveyer belt slides the glass through a sequence of production steps. Depending on the type of product being made, the glass is usually cut to various sizes with a diamond saw. After the glass is cut, employees separate the glass sheet into pieces and dispose of the off cuts in a dedicated waste bin. The off cuts are sent to glass manufacturers that recycle scraps into new glass. Given the complexity of these tasks and projects, practitioners require **practical understandings** of how to program and operate glass cutting machines, and how to move sheets of glass with ceiling-mounted cranes.

The resized glass is then sent to different workstations and moved onto specific production corridors on conveyer belts. These belts are covered in soft carpet material, and they are air-cushioned by a series of equally distanced perforations. Air is propelled through these holes onto the glass, lifting it slightly from the surface and making the glass almost weightless. Through this technology, employees can move bulky and heavy sheets of glass effortlessly, like an air hockey puck. As seen in Case One, many **rules** structuring glass making practices revolve around work safety. Blue collar employees wear special safety gear suited to handle glass, including safety googles as well as safety gloves and armguards to protect their wrist and hands from cuts. These safety standards are important due to the risk of serious injury from handling glass products.

Most types of safety or window glass is made from two sheets of glass held together in a frame. There are different manufacturing techniques for making both. Glass can be tempered into a baking oven for a minimum of two hours to increase its strength. Another common technique is called layered glass, which involves laying a plastic film between two glass sheets and heating and pressing the sheets into a special oven. A third common production method is called insulated glass, which consists of two sheets of glass held together by a vinyl frame and separated by a vacuum or gas-filled space to reduce the heat transfer. The **ends and goals** of these glass manufacturing practices are twofold. First, they are designed to create a product that if broken, will not shatter into uneven shards, which could cause serious harm and life-threatening injuries to people. Safety glass instead breaks into a circular spider web pattern. Secondly, safety glass, and in particular insulated glass, is a premium product which in addition to its safety features, when used in building construction, can also increase a building's thermal and noise insulation.

Veetro and *Glass* are specialised in multiple areas of glass manufacturing and cater to retail as well as commercial customers. As such, they carry out an array of practices that include procuring, logistics, manufacturing, retailing and building construction practices, many of which are carried out amid the orders described above. Since glass sheets are not produced in-house, procurement practices are carried out to forecast, order and import glass. Examples of projects and tasks associated with procurement practices include using computer software for calculating the number of sheets to order, communicating via email with a supplier, paying a supplier via electronic bank transfer and so forth. Projects and tasks associated with manufacturing practices include cutting pieces of vinyl and joining them together via a heat process to create a window frame, attaching two sheets of glass to a window frame, laying polyvinyl butyral (PVB) film between two sheets of glass in preparation for glass lamination, and pushing glass sheets into a baking oven.

Similar to Case One, the **general understandings** imbuing these companies

is a sense of pride in the quality of their work and a sense of community and mutual respect for fellow industry practitioners: *"Although we were competitors, we were still dependent on one another for different things so we had a reasonable amount of respect and obligation to be able to deal with one another on an open and friendly relationship"* (Will, General Manger, Glass).

Due to the extensive use of glass as a building material, safety glass and glass manufacturers are subjected to complex building regulations and standards. For example, *Glass* and *Veetro* must manufacture safety glass according to a set of specifications to ensure that what is produced fits into "safety glass type A" requirements, and complies with the Australian and New Zealand safety standard (safety glazing materials in buildings – AS/NZS 2208:1996). Quality assurance practices are prominent in the industry to ensure glass products are manufactured to standards.

One example of a task associated with quality standards is placing a glass sheet upright on a rack and shining a light against it to spot defects or cracks. Other key projects and tasks relate to testing. Tests for safety glass are typically administered by a swinging pendulum off a weighted object, which is meant to simulate a brute force impact. The impactor is usually a defined object with specified shape, hardness and mass. The force on the safety glass is adjusted by the height from which the object is dropped. The Australian and New Zealand safety standard regulations clearly specify the impactor and its characteristics, as well as the drop height necessary to generate the desired force to test the glass.

Plumbing operates from a warehouse and an attached office building within an industrial area. The warehouse is split into a receiving and storing area for raw materials and a workshop. Access to the warehouse is through a roller door and the warehousing racking is placed in front of the door for convenience. Given the great number of SKUs and components held by *Plumbing*, the bin locations of the warehouse are segmented into two areas. Loose components and finished products are kept in green and black plastic trays and stored on

the bottom shelves of the racking, whereas palletised items are kept on the top shelves. The remaining warehouse area is dedicated to the workshop, where a series of 10-meter-long workbenches are positioned parallel to each other.

Employees dressed in orange and yellow safety-wear have individual workstations where they assemble products. Each workstation presents similar **material arrangements:** a computer, a barcode scanner, a bench vice with swivel and a toolbox. Trays full of components are placed on the bench and assembled into products such as taps, spouts and mixing valves. The business offices are attached to the warehouse and present orders typically found in office settings. Meeting rooms are furnished with inexpensive tables and chairs, while posters and marketing material produced by the organisation are on display on the office walls. There are many practices carried out amid the orders described above, including R&D, logistics practices, sales, manufacturing and quality management practices. Examples of projects and tasks associated with manufacturing practices are reading a work order on a computer screen, walking to a warehouse bin to pick trays of components, scanning the components that make up the bill of material (BOM) of the production job to be run, assembling the components together and placing the finished pieces into a new tray. These tasks and projects require **practical understandings** related to knowing how to read a BOM and understand the parent-child relationship between components and final product, how to find a bin location based on the racking alphanumeric coding system, and so forth.

Similar to *Glass* and *Veetro, Plumbing*'s products are also used in commercial and residential construction applications, and therefore must follow a series of standards and regulations. For *Plumbing,* these include the Australian New Zealand standard for Water supply —Tap ware (AS/NZS 3718:2005). Thus, quality management practices are prominent in the bundle of practice-orders that characterise this organisation. Projects and tasks associated with quality practices relate to testing. Examples of these projects and tasks include: adjusting a test machine to a pressure up to 25 bars, to test the constant pressure leak tightness of a tap; and reading the measurement of the flowrate of a device whilst adjusting the linear increase of water supply pressure.

Finally, *Certiso* is a certification and quality assurance business organised as a confederation of branches. *Certiso* is involved in quality assurance activities for ISO standards in manufacturing, retail, logistics, agricultural, financial and healthcare sectors. This work usually involves the use of computers, manuals, checklists, websites, standards documents, and so forth. Quality managers also need **practical understanding** about relevant standards and their applications in practice. In enacting quality assurance practice, branch members undertake site visits of client premises, review documentation and make assessments, make recommendations on how to comply with standards' requirements and provide plans on how to implement those recommendations, and write manuals and mandatory standard operating procedures (as required by the ISO standards).

Certiso represents a unique site in the data set given that it has business practices deliberately centred on coopetition. Each office within the confederation collaborates and competes with others for individual projects. The main goal of *Leo*, the group assurance manager, is to manage these situations to ensure the best business outcomes for the confederation and maximise the chances of winning a tender. *Certiso* has a set of clear governance rules around the practices of coopetition and resulting agreements and activities. *Certiso*'s coopetition practices are managed through rules that direct all members of the organisation. This aspect is particularly important, as shared understandings of how to participate in particular activities in an effective and acceptable way with other people is crucial (Meier et al. 2018).

The **general understandings** inspiring these practitioners are a drive for revenue generation, offering the best service to the client, creating optimal opportunities for the confederation, and confidence in the partners' capabilities to deliver a project successfully. One point should be made about the **teleoaffective structure** of these quality certification practices. In pursuit of profit, any branch can decide to compete with other branches or collaborate with them whenever a project is available. As a result, projects and tasks are structured depending on the choice to either compete or collaborate.

The strategy of the organisation is to have different branches collaborate if that can increase the chances of securing business, and then let them compete to decide which branch will carry out the project. The teleoaffective structure of the practice is often characterised by negative emotions and tension, since branches can miss out on the opportunity to participate in a project.

> *At the end of the day there is one bloke at the top and that's me and I make the final call and you are right, not everyone is happy with the decision I make. But I always make it clear that we must always work in the best interest of the client and obviously of the confederation.* (Leo, Group Assurance Manager & Industry Standard Committee Vice-Chair, Certiso)

Some examples of the projects and tasks that *Leo* talked about during the interview include reviewing tender requirements, analysing branches' strengths and weaknesses, and selecting branches that can offer the best service to the client. Doings and sayings associated with these tasks range from talking to a branch office manager, to writing a tender response document, and listing quality auditing activities on a sheet of paper for a client.

In summary *Veetro*, *Glass* and *Plumbing* share similar practice-order bundles related to manufacturing practices, made up of workshops, warehouses, machines and offices. In contrast, *Certiso* presents order-bundles typical of a consulting business. Across each of the companies in Case Two, quality management practices play an important role in the practice-order bundles that compose these organisations. The next section will present how coopetition is prefigured within the practice-order bundles described above.

5.2.2 Case Two, how is coopetition prefigured in the bundle of practices and orders? How does it emerge?

The practitioners from *Glass*, *Veetro*, *Plumbing* and *Certiso* who have roles related to quality assurance and standards, all pointed out that competitors collaborate on industry standards. The theme of rules and their importance to

practitioners was reiterated by in each of the interviewees from this case. Rules are one of the elements that link the doings and sayings of a specific practice. Rules single out the actions a person should take when carrying out a practice, and the actions to which other people performing the same practice should (theoretically) adhere. **Rules** therefore form an important part of quality assurance and standards. The establishment of standards is a form of rulemaking, and the quality assurance is a form of checking adherence to those rules.

In addition, coopetition transpires within the bundle of quality standards and rule setting practices: "*I think the standardization process in general is the best example of competitors [...] collaborating to get the best deal for themselves, because they want a standard that is robust, that gives an accurate result, and that they can all meet*" (Dane, Quality Manager and Industry Standard Committee Member, Veetro).

Quality managers pursue two main **ends** when collaborating with competitors on standards. Firstly, they recognise that collaborating with competitors to lobby industry regulators provides them with a greater bargaining power than if they did so by themselves. Single organisations or people lobbying government decision makers are often seen as being driven by self-interest. Representing a united front avoids or at least minimises potential or perceived conflicts of interests when discussing industry standards and/or lobbying regulators.

> *With the certification bodies it's again that the advantage is they are presenting to [Regulator] a joint view that [Regulator] would respect [enough] to say: 'Okay then, if you all agree on this then that's the way we would go.' If all the certification bodies agree, unless it's completely against the requirements of the standards then [Regulator] can say, 'Okay we can accept your view as a group of respected certification bodies'* (Dane, Quality Manager, Veetro).

Secondly, practitioners want to ensure that they can meet the requirements

imposed by their respective accreditation authority. Collaboration amongst competitors on standards has thus the end of establishing a set of industry service standards that are feasible for all organisations involved*: "In the example of working with industry groups, [it's…] having competitors at the same table developing ideas, standards and lobbying for the industry"* (Nick, Quality and Regulatory Affairs Manager, Plumbing).

Another end that practitioners pursue is related to ensuring that there is a baseline service quality and performance for all certifying practices. This service baseline also reduces the chances of companies pursuing price dumping strategies and offering below market prices by reducing the quality of their service: "*certainly, lobbying is one of the core areas, the other part of collaboration is maintaining industry standards so that with looking to see whether we can work a bit more collaborative to maintain the quality of the services that we provide as certifiers…*" (Leo, Group Assurance Manager & Industry Standard Committee Vice-Chair, Certiso).

Like in Case One, competitors work through the medium of existing practices to collaborate with competitors on industry standards. As a result, practices in this case are **prefigured** rather than emerging. The practice-order bundles of quality standards and rule setting involve multiple arrangements that include individual companies' quality departments as well as quality and standards associations. Managers and employees working in the quality standards field are connected to other industry practitioners through these associations. By being a member of an industry standards association, practitioners can review, consider implications and contribute to any discussion regarding industry standards and quality requirements.

Coopetition emerges within multiple bundles of practices that are interwoven with rules and standards-setting, such as business lobbying practices and meeting practices. The orders through which these practices are enacted comprise meeting rooms, hotel lobbies, conference halls, and companies' offices.

So as competitors they would sit around the table and it's more the technical people that are sitting around the table rather than the marketing people or salespeople (…) so they would sit around the table and discuss (…), so they can prepare their submissions… (Dane, Quality Manager, Veetro).

The next section will discuss the elements that characterise the practices in which coopetition is present.

5.2.3 Case Two, which practice elements characterise the practices in which coopetition is present (or not)?

The practices of quality standards development and rule setting involve the drafting of documents, the navigating of files on current standards, planning meetings, contact with members of industry associations and standards governing bodies, and so forth. The instances of quality practitioners imply a certain understanding for practitioners being capable of participating – for example, knowing how to navigate complex standards guidelines and documents and how to apply those standards to work practices. The **general understandings** inspiring these practices are a sense of community in the industry, a sense of contributing to something broader than themselves, a commitment to improving the industry as a whole and providing better services for clients.

Furthermore, formal **rules** play a substantial role in the arrays of activity that compose quality standards. The rules that the quality managers follow are centred on making standards that everybody in the industry can follow, making standards that do not hinder worker's ability to conduct business and setting standards that can be met with the current level of knowledge and machinery most companies own.

The specific tasks undertaken for the projects of quality standards, and the

rules and understandings implied to undertake such actions, depend in most sites on the material arrangements found in office spaces. These orders include office buildings, desks, computers, the systems on these computers, the functionalities within these systems, manuals, documents, telephones, meeting rooms and coffee rooms. The practice of quality standards and rule-setting is linked to the very set of quality documents and regulations from which the practice transpires. Without quality documents and regulations, the practice of quality management in each setting is unimaginable. Quality management implied certain constitutive elements that were found in the arrangement, such as quality management files, manuals, systems and so forth, which are constitutive of the practice.

The **teleoaffective structure** of the practices described above reflects the attention these quality management practitioners put on open discussions and feedback. For example, projects and tasks are usually organised through a sequence of: receiving a set of proposing standards from a governing body; sharing the proposal to all association members; reviewing all comments from the members; and submitting feedback to the industry bodies and regulators.

Quality standards and rule setting as an activity is also related to other activities, such as meeting practices, administrating practices, informal social practices, and so on, which together form the complex practice-order bundle that is quality standards and rule-setting. Some of the projects and tasks described by the interviewees were attending industry meetings, and reviewing industry technical standards and proposals. Evaluating regulations and discussing standards comprised one of the primary activities related to setting industry standards. Collaboration would be based on correspondence and meetings dedicated to specific topics. Each industry association member can review proposed industry standards such as ISO 9001 and submit their feedback. Some instances of the doings and sayings related to these practices are: greeting fellow quality managers at a conference; reading a quality standards proposal; taking notes; chatting to a colleague about the standards; and writing a feedback report among others. Meetings between practitioners are another key activity where quality standard and rules setting, and meeting

practices intersect. Small meetings and conferences are held during the year to discuss standards in an open forum. The purpose of the meetings is twofold. Firstly, association members wish to agree on quality standards that can be achieved and agreed on by the industry: *"We would have probably three or four small meetings per year and at least fairly large conference every year, where these things were discussed in an open forum and also over a drink here and there"* (Will, General Manger, Glass).

Secondly, the meetings reflect on the reputation of the company and reliability of its services in front of the client, as *Dane* described:

> *… if one company had better equipment that could achieve tighter tolerances, they would be pushing for a tight tolerance. If the other person might be pushing for a looser tolerance so you would then have to come to a collaborative agreement about, 'yes this is what we can achieve and what we live with.'So that was more sort of a technical collaboration* (Dane, Quality Manager, Veetro).

5.2.4 Case Two Summary

For the practitioners from Case Two, coopetition practices transpire from quality standards and rule-setting practices. These rules inform and direct the performance of activities and the organisation of industry practices. To this extent, setting rules and quality standards serve two functions: monitoring practices as performances and monitoring practices as entities (Shove et al. 2012). Firstly, quality standards provide practitioners with feedback on whether they are performing the practice correctly. As Shove et al. (2012) argue, practitioners self-monitoring their performance, or having their performance monitored by others, is part of the enactment of a practice. Formalising rules represents a way of monitoring and formalising "aspects of performance in terms of which subsequent enactments are defined*"* (Shove et al. 2012, p. 103). The rule and quality standards agreed by these practitioners help define the practical and general understandings of many quality assurance business practices.

5.3 Case Three, Planning & Procurement Sites

Bulkgrain, *Rail* and *Telem* are large corporate enterprises. *Bulkgrain* is a public company specialised in grain storage, transportation and wholesale. The company sells grain in both the domestic and international market. *Rail* is a government-owned rail services provider that controls and operates the metro system of a large Australian city. Lastly, *Telem* is a government-owned telecommunications provider that designs, operates and sells telecommunications systems. These companies operate their businesses in the metropolitan area of a major city in Australia as well as different locations in the country[9]. As with Case Two, the researcher was not granted access to these companies' sites but instead the data was collected through interviews, companies' websites and publicly available company documents (i.e., annual reports).

5.3.1 Case Three, amid which practice-order bundles is coopetition performed?

Bulkgrain owns and operates a network of grain storage facilities around the country that make up its grain supply network. This network feeds into major Australian ports for grain exported overseas via bulk carriers. *Bulkgrain* present an array of orders that stretch throughout Australia. After grain farmers harvest their crops, the produce is delivered via truck to a *Bulkgrain* storage site. These sites are scattered around rural areas of the country. Once the truck arrives at the site, an employee collects grain samples from a deck suspended over the truck with a vacuum pipe. Grain is then tested to measure its grade and protein content. This step is critical because the grain's protein content determines its quality, and a higher-grade grain fetches higher prices

[9] The researcher was not given access to the companies' premises and thus it was not possible to observe the companies' work sites.

on the market.

After the grain is tested, the truck is sent to a weighbridge to weigh the grain. Once the weighbridge operator records a weight reading on his/her/their computer, the truck is sent to the grain bunker or silo to discharge its contents. Bunkers are huge piles of grain stored underneath tarp, whereas silos are cement cylinders that usually offer more protection to weather elements and pests. Once the truck arrives to the unloading zone, a *Bulkgrain* employee directs the truck driver and align the rear end of the truck to a machine called a hopper. This machine consists of a large pit where the grain is tipped and a long conveyer belt that carries the grain to the top of the bunker pile.

Once the grain is collected, it is sold to customers and shipped away. Grain is again tipped onto trucks or rail containers and shipped to flour mills, oil manufacturing facilities and seaports. If the grain is exported internationally, it will be stored temporarily on silos next to deep water ports and loaded onto bulk vessels for its journey. Employees working on these sites need to be trained to handle tough working conditions and long shifts. The grain storage sites are usually in remote rural areas with no access to services and shops. Temperature on those sites average between 30 and 40 degrees Celsius and face masks need to be worn constantly due to the dust clouds created by the grain handling operations. Employees are required to wear safety boots, hard hats, goggles, and high visibility vests. They are also instructed to carry a five-litre bottle of water on site. The orders in the *Bulkgrain* headquarter are very different from those of the grain sites, where air-conditioned offices are furnished with ergonomic desks and chairs. These orders are like most settings found in commercial districts of metropolitan cities in Australia.

The practice-order of *Rail* permeate through a complex network of rail tracks, train stations, train depos, maintenance facilities and office spaces within a metropolitan area of a major city in Australia. *Sam*'s procurement department offices are located within the central station of the city. The orders within the procurement department are made of office cubicles, computers, printers and office furniture. The walls are adorned with posters of *Rail*'s current projects

and initiatives. *Sam's* office is located at the back of the building and has wide posters and charts affixed on one of the office walls. *Sam* explained that each poster shows different KPIs against which he measures his suppliers. Sam often runs meeting with suppliers in his office to show them his tracking system and discuss their performance.

The orders amongst which many *Telem* practices are carried out are similar to those of large cap organisations. In [*City 1*] *Telem*'s workplace spans four main levels and is linked via an interconnecting stair that is a substantial connecting device through the floors. The stairs as well as the neon lights above them are tinted with the bright colour used for *Telem*'s logo. Further, carpets showing the circular pattern of *Telem*'s logo are used to adorn meeting spaces and rooms. Overall, the design concept is derived from 'bytes' of information and notions of speed, agility, movement and connectivity. Office spaces are delimited by laminated glass with prints of cascading 0s and 1s, which represent the stream of digital information flowing across *Telem'*s network. The orders of these facilities include a network of meeting rooms, managerial offices, videoconferencing and training rooms as well as breakout spaces, and kitchen facilities equipped with audio visual communication.

Aside from the orders found in *Telem'*s offices, another key set of orders is composed by the physical telecommunication network managed by both organisations. *Comm Corp* owns and operates thousands of exchange stations in which landline telephone calls are routed through several switches. These exchange stations tend to have similar construction designs – usually two-storey, red-brick buildings protected by high fences and barbed wire. The exchange stations' operations are based on circuit switching technology through which connections are established between the phones in different locations. The structure of a switch is an odd number of layers of smaller, simpler sub-switches. Each layer is interconnected by a web of wires that goes from each sub-switch to a set of the next layer of sub-switches. Assembles of switches, wires and other electrical components are staggered onto metal racks. These exchange stations represent central nodes within the telecommunication network, from which telephone and internet connection

lines are routed into suburbs. Copper wires connect the exchange stations to routing pillars, which are green tube-like metal boxes positioned in the streets. Wires running from the exchange stations are connected to the wires that run into individual households.

Bulkgrain operates in a competitive and price-driven industry. Within this industry *Bulkgrain* is one of the biggest players and operates in quasi-monopoly conditions. *Bulkgrain* carries the practical competence and material tools to trade grain on its own. There are little to no incentives for *Bulkgrain* to seek any sort of collaboration with other organisations. The general understandings permeating business practices in the industry revolve around fierce competition and profit maximization. According to *Matt*, the industry is purely driven by competitive practices and there is no interest in collaboration. As a result, coopetition is not part of *Bulkgrain*'s business practices.

> *I used to hear all sorts of stories because of the nature of the business there were a lot of people stuck in that 'cost per ton' type mode. Everyone was trying to beat each other for two dollars here and five dollars here. And the competitive nature there was at that level with those people* (Matt, Logistics Planning Manager, Bulkgrain).

Similar to *Bulkgrain, Rail* operate in a monopoly context as it is the only organisation allowed to provide rail services by the government. *Sam*, the chief procurement officer, stated that the company did not engage in any competitive or collaborative activities with other companies due to the lack of competition. *Rail* does, however, promote competition amongst its supplier base to increase the efficiency of its procurement process and to get competitive prices from suppliers. *Rail* drives competition across its supplier base through procurement activities such as group tenders and supplier performance measurement and comparison. Despite operating in different industries, *Bulkgrain* and *Rail* present similar findings. Both organisations have enough material resources, employees and competences and to carry out business practices on their own, unlike the smaller organisations analysed in Case One and Case Two. Therefore, coopetition was not something that was

prefigured, emerged or enacted for *Bulkgrain* and *Rail*.

In contrast, *Telem* regularly collaborates and competes with *Comm Corp*, its primary competitor. In this case, however, coopetition has emerged due to anti-monopoly regulations imposed by government regulators.

> *[Telem] was set up as a government business enterprise to effectively kill the stranglehold that [Comm Corp] had on Australia telecommunications […] The government was very big about wanting to make sure they had more competition in […] telecommunications, so [Comm Corp] immediately was faced with a competitor that was regulated or demanded by the government to actually break their monopoly* (Carol, Chief Procurement Officer, Telem).

The main objective of *Telem* is to replace the old copper cable network that connects households and businesses to *Comm Corp* telecommunication network with high velocity fibre optic cables. In the early 2010s, *Comm Corp* and *Telem* signed a legal agreement by which *Comm Corp* agreed to disconnect its customers from the old copper networks in areas where fibre optic technology had been installed, and agreed to lease unused fibre optic cables and exchange stations and ducts to *Telem*. As part of the agreement, *Comm Corp* would not be able to market their mobile network as an alternative to *Telem* for several years, but it was agreed that *Comm Corp* would remain the owner of the telecommunications network. The next section will present how coopetition emerges within the practice-order bundles described above.

5.3.2 Case Three, how is coopetition prefigured in the bundle of practices and orders? How does it emerge?

Telem's practices have a predominant emergent character. Despite the amount of funding and expertise owned by *Telem*, the organisation is more akin to a start-up business than an established corporation. When the organisation was founded, there were many unknowns, such as work practices and management

styles, and the initial workforce was predominantly new to the business. As a result, *Telem* had to develop a set of new business practices that have since become part of the organisation's workplace standards. The emergent quality of *Telem*'s practices transpired in the practices carried out with *Comm Corp*. Both *Telem* and *Comm Corp* had to adapt and re-configure their business practices in order to align with government policy.

As a result of *Telem* being set up by the government to decrease the monopoly of *Comm Corp* in the telecommunications market, the two organisations were required to re-arrange common business practices to maintain a relationship based on both collaboration and competition. In particular, *Comm Corp* supplies designs, constructions, parts and equipment to *Telem*, whilst at the same time the two organisations compete on specific service and product offers. Overall, they are customers, suppliers and competitors to each other.

This observation is particularly important because it shows how different sets of practices are linked through casual connections – in this case, government policy making practices have had a direct impact on the business practices that *Telem* and *Comm Corp* undertake.

> *Competition tends to be inherited in both organizations […] So if there was any way for either to be successful and get more benefits without having the other one in the market at all, that's probably what they would do. But they can't, they absolutely need each other* (Carol, Chief Procurement Officer, Telem).

The next section will discuss the practice elements that characterise the practices in which coopetition is present.

5.3.3 Case Three, which practice elements characterise the practices in which coopetition is present (or not)?

Telem managers pursue primary ends such as meeting government's

commercial and legal requirements, running a profitable business and handling the relationship with their *Comm Corp* in an open, transparent manner. The history of the relationship between *Telem* and *Comm Corp* defines many of the practices in which coopetition has emerged.

The general understandings inspiring the two organisations' practices are a drive for market competitiveness and an understanding of their mutual dependencies. Neither organisation wishes to give away more commercial benefits to the other than is necessary, but both realise that their business success depends on a collaborative working relationship.

> *Neither of us want to be able to give to the other more commercial benefits to what we are entitled to, but we often offer what is fair not what is profitable. So they are both very competitive organizations, and both want to win so to speak… Recognizing that to win is actually relying on both organizations being successful is what really keeps them together* (Carol, Chief Procurement Officer, Telem).

The mutual dependency between the two companies impacts many of their project management practices and requires practitioners to find solutions to project issues and relationship breakdowns. Many of the rules guiding managers' projects and tasks revolve around keeping open communication channels and resolving issues at all levels of management.

> *So, our CEO would actually meet their CEO to be able to fix something. Our Chief Operating Officer would meet with their Chief Operating Officer to be able to fix something. They've got a key account person who would meet with our key account person on some initiatives* (Carol, Chief Procurement Officer, Telem).

In this case, coopetition transpires through project management practices. The projects and tasks carried out between *Telem* and *Comm Corp* resemble the ones found in Case One organisation *Material Equip*. Projects and tasks include splitting teams and activities performed between the two

organisations, setting up project schedules, escalating issues to managers, and monitoring a project's progress. *Telem* and *Comm Corp* have separate teams in their organisations that deal specifically with each segment of the relationship.

> *What we did is we had many teams set up between Comm Corp and Telem. In the many teams, there were many engineering teams, many equipment teams. So commercial teams to be able to understand those things. A legal team…* (Carol, Chief Procurement Officer, Telem).

Projects and tasks are also heavily focused on sharing information and working collaboratively to deliver the project's objectives: *"[there's so very much around sharing of information, working collaboratively on how we were going to set things out, [and] how we were going to work together"* (Carol, Chief Procurement Officer, Telem).

Coopetition is not, however, isolated to project management practice, as it encompasses practice bundles like legal practices. Since *Telem* and *Comm Corp* are highly scrutinised by government lawmakers, project management practices are bundled with legal practices. As well, both organisations perform due diligence and legal activities connected to law making practices to prove they do not carry out any collusive activities.

Relationship management practices are also part of the net of practices related to coopetition. For example, *Telem* has a dedicated team of people that manage the relationship between the two companies. The main projects and tasks performed by this team are centred on informing and sharing information within the business to keep every part of the company updated on current activities between *Telem* and *Comm Corp*. They also have a senior executive on each level of management aligned with another, by having a direct line of communication in case issues arise between the two companies: *"you have people at the highest level providing executive support and if they provide executive support then if something happens down here and there is so much tension and strain that is damaging, you can actually escalate up the*

organization" (Carol, Chief Procurement Officer, Telem).

Each senior manager is in direct contact with his/her/their counterpart in the other organisation. As such, issues are escalated promptly and resolved through direct meetings between senior executives.

> *We make the decision separate and for the good of that specific decision. But it's very well informed. So if I am doing something in the procurement role, I'll make sure that the Comm Corp team will know what it's going so they can take that into consideration* (Carol, Chief Procurement Officer, Telem).

5.3.4 Case Three Summary

Practices related to coopetition emerged from government regulations and rules, as in this case, government regulators introduced a government-owned firm into the industry. The regulators' end was to break up the monopoly of an industry provider and ruled that the private firm work collaboratively with the government-owned enterprise. Collaboration occurred at a project level for one of the companies investigated and was based on explicit rules around engagement for coopetition, which involved splitting teams and having different levels of management in both companies dedicated to managing the relationship. The main practices identified centred on project management and the main goal of coopetition was to work on projects where the companies' expertise was complementary to each other.

5.4 Case Four, Manufacturing Sites

The fourth case study investigates coopetition amongst a group of companies operating within the same supply chain. The facilities of these organisations are in an industrial area of a regional town. *Cables* is a small cables and fibre optics company that specialises in civil, construction and mining projects and operates from a small, two storey, industrial facility. *Maintenance* and *Facility Services* are specialised in engineering services and maintenance work for heavy industries such as steelmaking, cement and mining. *Maintenance* is a medium-size company, while *Facility Services* is a large company with offices in Australia and New Zealand. *Chem Supplies* is a small branch of a large United States-based company that specialises in oil and industrial lubricants. *Steel* is a multinational company that specialises in steel products and owns a manufacturing facility in Australia.

5.4.1 Case Four, amid which practice-order bundles is coopetition performed?

The steel manufacturing production in the geographical region which hosts the companies discussed in this case study, can be considered a clustered industry. This is due to the significant concentration of companies, specialised suppliers and service providers operating in the steel supply chain (Porter 1998). In this cluster there are also associated education and research institutions, which were originally established, and which continue to provide technical education for the engineers and metallurgists employed in the region's steel industry. Steel making practices are interwoven with educational and training practices, and hence, the regional industry presents constellations of practice-order bundles that embrace multiple arrangements beyond the steel plant. These orders include technical college and university classrooms, research laboratories and equipment, technical training centres, and more. These institutions have also hosted workers from different organisations that supply services to *Steel,* as well as workers from *Steel* who learned aspects of their professional practices as students, cadets and apprentices. These historical relationships forge the foundation for ongoing familiarity among these

practitioners.

There are several mechanical, civil and electrical engineering firms that supply services and products to *Steel*, as well as other clients within or outside the region. A dominant feature of *Steel*'s supply chain strategy has been a focus on securing the most competitive price and preventing interactions between its suppliers due to concerns of potential price fixing by said suppliers. *Steel* managers' procurement practices reflect this general end. Yet, with the steel manufacturing output in a steady decline over the last years, several of *Steel*'s former suppliers have been forced to exit the market. Most of the suppliers that are still able to operate have been sourcing some work from other clients within and from outside the region, to maintain their business' viability. The organisations in this case, *Maintenance*, *Facility Services* and *Chem Supplies,* all feed into *Steel*'s supply chain.

Steel's business practices are carried out amid a unique arrangement of industrial buildings, railways, train carriages, pipelines, wharf crates, bulk cargo vessels and furnaces. The plant covers approximately 700 hectares, has its own train station and is near the coastline and a deep-water port. The plant has numerous facilities and buildings dedicated to different projects and tasks that are part of steel making practices, such as iron making, coke making, steel making and steel rolling. Importantly, *Steel*'s plant is a large industrial facility that requires any worker who works on site to have extensive knowledge of its operations. Maintenance companies are required to understand the ramifications of maintenance issues and their potential disruptions to *Steel*'s operations. Any disruption of *Steel*'s operations come at a significant financial cost. Further, given the high-risk context within which workers and managers operate in *Steel,* suppliers are required to follow strict safety rules when carrying out activities to prevent incidents from occurring. As well, maintenance companies' business practices and *Steel*'s work safety practices share a similar organisational structure in relation to rules. For instance, workers are required to follow signs and instructions displayed on building's walls and notice boards, to wear certain kinds of personal protective equipment (e.g., hard hats, high visibility vests, and enclosed shoes).

In working with suppliers, *Steel* has set up a procurement system based on three tiers. *Steel*'s procurement practices are guided by a set of rules on how to categorise contractors from whom it procures work to one of these tiers. Tier 3 is composed of small contractors allowed to bid for work worth between $12,000 and $20,000. Tier 2 suppliers are allowed to bid for work worth up to $200,000. Tier 1 suppliers can bid for contracts of any value. Tier 1 suppliers are a small group of local contractors specialised in custom-made, sophisticated engineering work. *Steel* works to influence competition and collaboration to its advantage, and as such, the tiering system **prefigures** 'who' can carry out work in the steel plant and the type of projects for which organisations are allowed to tender.

Steel's managers enact coopetition by encouraging collaboration amongst Tier 1 suppliers, but only when they ask them to work on projects beyond their capacity. They also drive competition through tendering practices on day-to-day maintenance projects. When projects are small, *Steel* managers organise tenders to drive down prices, and when projects are too big for a single Tier 1 company, they encourage collaboration between contractors. Some of the projects and tasks carried out by *Steel* include inviting companies to a tender, visiting a contractor's site to discuss a project, sharing tender documents, reviewing contractors' quotes, and setting contracts. *Steel* would also pursue particular projects to promote competition within its supplier base, such as implementing parallel sourcing, setting short-term contracts, and selecting a pool of suppliers for the same services or products.

> *I want them to be able to show what they can do and I really want to be able to work with the best so that process is one thing, but then once they become my supplier, I want to open things up [...] I want them to be able to help me in being the best they can be for me, so I am relying on them for my success. So I now absolutely want to be sure that we can [work] collaboratively together but I still want them to be really good, so [one] way that I make sure they really are good and they are always improving is that there is a bit of competition in the supply chain.* (Carol,

Ex- Chief Procurement Officer, Steel).

Visits to the *Cables* and *Facility Services* sites revealed the workspaces have been designed for function rather than aesthetics, with employees dressed in blue-collar clothing (e.g., safety shoes, heavy cotton work pants and shirts and high visibility vests). The arrangements of these companies' sites resemble those of Case One. Blue-collar workers perform their daily activities in a workshop; machines are laid out in a job shop manner. During the interviews, it was possible to observe workers perform different projects and tasks, such as welding and cutting steel components.

The first company analysed for Case Four was *Cables*, a small firm specialised in fibre optics design and construction. Like the SMEs analysed in Case One, *Cables* works on bespoke and highly customised projects. Each project is unique and requires the company to go through a tendering process to win the job. Demand for *Cables*' services fluctuates and is tied to major infrastructure projects in metropolitan areas. The company employs between 10 and 15 people but during peak periods it can employ up to 30 people. *Cables* works on major infrastructure projects managed by large organisations. Most of these projects are beyond *Cables*' capacity, and therefore, there is a mutual dependency between *Cables* and other SMEs in the industry. As a result of this dependency, *Cables*' General Manager values its business relationships highly: "*90 per cent of our work is quoted work, so the likes of the motorway projects, everyone wants a quote for, the mines, even if we are the preferred tenderer, they still want a price upfront before we start work"* (Martin, General Manager, Cables).

Cables shared similar organisational structures with the SMEs from Case One. Llike the engineering companies from Case One, the general understandings that inspire *Cables* practices are infused with a sense of proudness in the quality and design of their products, a high attention to details and commitment to providing unique solutions for clients. Secondly, most projects and tasks carried out by *Cables'* staff, such as designing and constructing electrical cable switch boards and installing fibre-optic systems and cables,

require a complex array of practical understandings. Thirdly, like the Case One companies, when it comes to collaborating with a competitor, *Cables*' manager's rule is to do so only when necessary.

Chem Supplies is a retailer of industrial lubricants and oils to metals industries — such as steel, aluminium and automotive — as well as mining industries. Within the steel industry, *Chem Supplies* has regular business with *Steel*. *Chem Supplies* managers pursue many ends, including meeting sales targets, developing business opportunities, and increasing market shares and penetration. Procurement practices in the industrial oils and lubricants industry show a particular organisational structure. The main end pursued by clients is to procure all the products needed for their operations. As a result, buyers bundle different chemical products under the same contract and expect suppliers to provide a quote or offer a price on the entire package supply. Contracts usually run from three to five years. After the first tender has occurred, the main projects and tasks carried out by the lubricant suppliers are centred on customer and product support. As a result, there is a strong emphasis on building lasting relationships with customers.

> *So, I guess most of the time the tender is going to only a small number of competitors. We've only got two-to-three competitors in our segment in Australia, and we'll compete with them on about every single piece of business. And so we know our competitors, they know us, our customers will talk to both of us*. (Sean, Sales, Product and Project Manager, Chem Supplies)

Maintenance and *Facility Services* are two engineering companies specialised in industrial maintenance projects. *Steel* is their biggest client and represents the majority of their business. As seen in Case One, organisations such as *Cables, Maintenance* and *Facility Services* collaborate with competitors to overcome capacity constraints. These companies' coopetition practices are largely influenced by the practice-order bundles of their main client, *Steel*. The next section will present how coopetition is prefigured within the practice-order bundles described above.

5.4.2 Case Four, how is coopetition prefigured in the bundle of practices and orders? How does it emerge?

Labour and access to a specialised workforce during business peak periods represents a major constraint for *Cables*. This pushes *Cables*' managing director to look for business partners. *Cables*' general manager pointed out that collaboration with competitors is performed through standard sub-contracting agreements in which the main reason for collaboration is the need for labour. *Cables*' manager did not mention any other instance in which he would collaborate with his competitors. As such, *Cables* manager's goal when engaging with competitors is to overcome labour limitations. Further, coopetition transpires mainly from sub-contracting practices**.** Some of the projects and tasks of sub-contracting are: explaining switch boards schematics; allocating project tasks to the contractor; borrowing labourers to install electrical cables; and so forth.

> *When they have a need for labour, they use us or specialist services and when we have a need for labour, we'll call them. And we are occasionally, not often, competing against them. So, we offer similar services and that's why we are able to use each other as a labour source, but it also means that we are occasionally competing against one another* (Martin, General Manager, Cables).

In contrast to *Cables*, *Chem Supplies* has a different approach to coopetition. For *Chem Supplies*, coopetition transpires from the bundles of practices revolving around tendering and sub-contracting. Coopetition is also influenced by the teleoaffective structure of these practices. Amongst the many projects and tasks that compose tendering practices, *Chem Supplies* may attempt to supply the whole product package or only some components of it. If the opportunity of winning the tender is low, an acceptable project composing these tendering practices is partnering with a competitor to increase the chances to sell products. The general acceptance and agreement

around this form of coopetition is reflected in the projects and tasks carried out by buyers, which may promote collaboration between competitors if they perceive a product to be superior to another. Further, coopetition is influenced by the material properties of industrial oils and lubricants. Although oil and lubricant suppliers compete for the same customers, they specialise in different market and product segments. Some companies specialise in the production of metalwork fluids and others in mineral oils, for instance. Specialisation and product diversification creates product segments in which rival companies do not compete. Within these segments, companies are willing to collaborate, especially if customers do not wish to supply an entire oil package from the same company.

Chem Supplies has a high degree of familiarity with competitors as well as customers due to the small size of the market for industrial oil and lubricants. Thus, customers engage directly with suppliers and encourage collaborative agreements between competing suppliers if beneficial for their needs. Coopetition for *Chem Supplies* is a strategy to increase business opportunities.

> *There would be some sort of formalized quotation provided on the basis of supplying the product for that particular end customer as part of the group supply tender. So sometimes we might not get invited to go into a group supply tender so we're forced to go into that form of supply with that end customer or end competitor, where sometimes we're invited but 90 per cent of the supply would be supplied by our competitor [...] It doesn't make any sense to put a complete bid in; we're better off to adjoin ourselves with one or all of the people and our preference is that we try to get our product in front of all of them* (Sean, Sales, Product and Project Manager, Chem Supplies).

Within the business community, there is a tacit expectation of collaborating with local suppliers rather than other suppliers from outside the region. The quality and craftsmanship of a company's work is a significant factor when choosing a collaborative approach with a well-known competitor. Companies from Tier 1 prefer to work with other companies that have the same level of

training and familiarity with *Steel*'s practices. According to *David*, collaborating or outsourcing work to external contractors is not a viable option. Companies outside the region may not be familiar with the safety regulations and operations within *Steel*'s plant, which could result in possible project delays or safety accidents. *David*, the ex-Commercial Manager of *Maintenance* commented, "*you talk to your competitors and the advantages of that are you're familiar with the quality of their work*", while *Jason*, Project Manager of *Facility Services* said, "*they know what the hazards are [...] these people have been doing this for so long and been there for such a long time and they know the plant"*.

As observed in Case One, tendering and sub-contracting practices can be seen at work as a chain of actions. For each tender, there are only a small number of competitors bidding against each other. Customers would engage directly with all suppliers before a tender, and typically have close relationships with their preferred suppliers. A supplier's decision to collaborate with its competitors is ultimately influenced by its relationship with the customer, the requirement of the tender and the perceived likelihood of winning the supply contract. As a result, if a customer has been purchasing products from a company for many years and there is a low chance of replacing it, the other competitors would try to collaborate with the incumbent supplier. Further, the in-depth management process and time spent with the customers presenting and explaining products increases the chance of customers requesting some products in the group supply. Furthermore, the general understandings imbuing contractors' business practices are a sense of loyalty to the local business community, as well as respect and trust in each other's capabilities. This makes collaboration with local companies (including competitors) more feasible than working with organisations from other areas.

This example shows how practices in which coopetition is present, such as tendering practices, are undetermined and open-ended. Collaborative arrangements are evaluated on a case-by-case basis. Companies must weigh the benefits related to increasing sales against the risks of losing sensitive information about products to a competitor, as products' chemical formulation

can be reverse engineered. Resultingly, practitioners adjust their actions and re-configure their projects and tasks to adapt to specific circumstances. As was evident in Case One and Case Two, coopetition results from pre-existing and persisting practice bundles. The next section will discuss the elements that characterise the practices in which coopetition is present.

5.4.3 Case Four, which practice elements characterise the practices in which coopetition is present (or not)?

The main ends pursued by *Steel* are influencing and controlling its sub-contractors to maximise profits, minimising maintenance costs, and avoiding safety issues. *Steel*'s procurement practices are influenced by the size of the maintenance issue they need to solve. According to *David*, the ex-Commercial Manager of *Maintenance*, *Steel* created this tiering system to minimise disruptions to its operations and the occurrence of safety incidents. *Steel*'s strategy was to select and train its Tier 1 suppliers to create a pool of trusted and reliable maintenance contractors. Due to the tiering system, the same group of suppliers are consistently called upon by *Steel*'s managers to solve issues on the plant. *Steel*'s managers' goal is to control maintenance companies by using coopetition as a procurement strategy. Their procurement practices are driven by two distinct teleological ends. Firstly, they need a pool of selected suppliers that can perform maintenance operations on time. Secondly, they want to avoid suppliers using their "preferred supplier" position to increase prices through price-fixing practices.

Chem Supplies' coopetition practices are deeply influenced by their customers' requirements and are spurred by tendering practices. Tendering practices are enacted through several projects and tasks, such as evaluating the tendering requirements, influencing the customer's purchasing decision, discussing the tender requirements and promoting a product's strengths. Before preparing a tender bid, companies will often consult with customers to discuss the scope and requirements of the tender. Some doings associated with these projects and tasks are: speaking to client; writing a scoping document; calculating

product prices; and looking at stock levels in an inventory system. *Chem Supplies* managers pursue various ends, including convincing the customer of the quality and value of their product and trying to increase the chances of having their products included in the supply package. *Sean*, the manager from *Chem Supplies*, defines this as an educational process, one based on relationship management that is focused on customers, deciders and influencers in the marketplace.

> S*ometimes we've been able to influence what's included in the tender. Having an impact on what the scope is [… ensures] that at least the attributes of our products, particularly on the equipment side are reflected in the tender* (Sean, Sales, Product and Project Manager, Chem Supplies).

Another important aspect that influences coopetition within these practices' organisational structure is the presence of rules. For example, supplying agreements are based on legally formalised supply contracts between *Chem Supplies* and its competitors. An agreement might entail the supply of a product for a customer as part of a group supply tender, under the condition that the products would be sold directly to the competitor. Another example of rules organising sub-contracting practices are Non-Disclosure Agreements between companies, specifically related to product intellectual properties and technical information.

Coopetition for maintenance companies mainly transpires from the bundle of tendering and sub-contracting practices. Yet, the orders in which these tenders take place profoundly influences the practices involved. Since *Steel* allocates jobs through tenders for maintenance projects inside the plant, tendering and sub-contracting practices exist within a particular order composed of buildings, furnaces, railways and sheds. The arrangements found at *Steel*'s plant underpin many of the projects and tasks carried out. The first key project that was identified during the interviews was site inspecting. Depending on the size of the project, companies from Tiers 1, 2 or 3 are invited to the site to inspect the area of the plant in which repairs are needed. Middle managers

from maintenance companies attend the inspection and are briefed on the job. Companies are then given any relevant documentation about the project and are invited to submit a price offer within five days. The company that offers the lowest price is awarded the contract.

> *You get your standard phone call to go and have a look at a job and go to a location where you [are] told where the site inspection [is]. And you would be shown the job and you get […] given the documentation […] You have five days to submit a price, closed envelope, submitted to a tender box* (David, ex-Commercial Manager, Maintenance).

The unfolding of coopetition activities is bound to the practices and material arrangements of *Steel's* site. In this case, coopetition can materialise right at the site inspections, where companies' managers decide whether to compete or collaborate. Suppliers evaluate the work site, the maintenance work required and their ability to bid for the job. The materiality of orders within the plant and the physical position of entities plays another important role, as some jobs are more highly sought after than others, depending on their location. Maintenance company managers approach the plant location as real estate business, where specific locations are considered more profitable or valuable than others.

> *If you claim the street, it's all about street marks. If you claim the street, you win it hard and fair. Let's say, the first tender on a particular area of the [plant] comes up and everyone goes hard on it, competitive, and then someone wins it. Then, alright, good luck to you* (David, ex-Commercial Manager, Maintenance).

Another key project related to site inspection is **signalling**. In this case signalling refers to onsite managers developing a sense of what others' intentions might be. On-site, managers talk to each other to investigate other companies' intentions and capacity to do the work:

> *You'll talk to the other guys and say: 'Good job?'… 'Yeah, good job, isn't*

it?' and you try to know if they are keen for it. [...] *Sometimes they'd just say it, they'll just shake their head or give you a signal or you'd look at them and you'd go what do you think? And they'd go, 'no, can't do it'* (David, ex-Commercial Manager, Maintenance).

Their final decision is based on various factors: their capacity, their level of business, and their ability to do the job. Collaborating with competitors is considered a possible option in cases of resource constraints. Coopetition is driven by mutual dependency between competitors due to these capacity constraints. Coopetition is further encouraged by the high degree of familiarity and trust in competitors' skills. The supply of work in the market determines the balance between collaboration and competition. If there is enough demand for maintenance services in the market, companies tend to have a more collaborative stance, while less demand will make companies more competitive.

At any point in time you can double your workforce. What you are talking about is your supply chain, double in size with a matter of a phone call. You don't have to do the formal process of going through the outsourcing, you know these people, it's a phone call: 'You guys are busy? Is it quiet? Can you do this job? Work with us on this job? Yeah, scheduled rates? Yeah, scheduled rates, we know what your rates are. No worries...make sure you put your boys in... yeah, no worries...Done' (David, ex-Commercial Manager, Maintenance*).*

This case illustrates how the bundles of material arrangements (such as steel making facilities, furnaces, office buildings, coal piles and steel coils) and practices intersect to constitute the social site in which coopetition transpires. If competitors decide to collaborate, their projects and tasks revolve around setting sub-contracting agreements and sharing workers. Contrary to other companies analysed previously in this study, maintenance companies working in *Steel*'s supply chain share their workers and work jointly to complete projects. Projects and tasks are organised around two types of contract rules: fixed price contract rules and scheduled rate contract rules. The fixed price

arrangement is a standard sub-contracting arrangement in which the leading company that won the tender outsources a portion of the project to a competitor. The sub-contractor is responsible for its part of the project and manages it directly.

If the contractor is working on a scheduled rate basis instead, they are working under the direction, control and coordination of the lead company. In this scenario, the sub-contractor is mainly used for gaining access to the labour force. Management is rarely involved in the project, given that the project is controlled by the leading company. Importantly, in a scheduled rate agreement, employees from the sub-contracting organisation work under the direction of the leading company. In this context, teams from different companies work as a single entity with the goal of completing the project on time.

The high degree of familiarity among practitioners across organisations, the knowledge of a competitors' cost structure and the limited number of companies permitted to be part of the Tier 1 group, creates the conditions for collusive practices. *David* explained that collusion is used to manage the distribution of project work amongst Tier 1 companies. According to *David*, the end of managers is not to inflate market prices. Rather, Tier 1 companies use collusion to avoid competing for jobs they have no interest in, or no capacity to take on. Collaboration, and in some instances collusion, is always tempered with the consideration of profitability. As such, companies still fight fiercely to win jobs that present a good source of revenue. If a company wins the maintenance contract for a particular area, it is more likely to win other contracts in the same area. Once a company becomes established in one area of the plant, there is a tacit agreement on how to divide the control of the plant.

> *Some jobs are competitively fought for, depending on the circumstance. Other jobs are not hard fought for. There were only maybe one or two genuine bids out of the five or six [...] so you can compare this to cartel type behaviour where the market is controlled to a certain degree* (David, ex-Commercial Manager, Maintenance).

5.4.4 Case Four Summary

This case showed that the understandings and materiality of these companies' practices influenced their approach to collaboration and competition. Moreover, the main way to engage in coopetition was related to tendering practices. The case also revealed that the primary company in the supply chain had a strategy and used coopetition to its advantage to control its suppliers. The main bundle of practices in which coopetition transpired centred on project management, sub-contracting and tendering. The findings also revealed that there were colluding practices within this case. These practices were not aimed at inflating market prices, but were instead aimed at opting out of projects considered unfeasible without losing credibility with the client. Lastly, the goal of coopetition in this Case Study was to work on projects where the companies' expertise was complementary to each other, thereby increasing capacity and revenues. The practitioners interviewed did not see coopetition as a means to achieve any other goals.

5.5 Case Five, Social Work Sites

Case Five investigated coopetition amongst non-for-profit organisations (NGOs) involved in community and care services in Australia. This case analysed four NGOs working in regional Australia: *Care Services*, *Community Services, Family Services* and *Community Org*. The first three organisations offer care services, including family care, home care and care for children. *Community Services* and *Care Services* specialise in services directed towards people with a culturally and linguistically diverse background. *Family Services* provides support to families considered to be socioeconomically vulnerable and disadvantaged. *Community Org* is the peak body for community services in the region, whose members provide a variety of care services.

5.5.1 Case Five, amid which practice-order bundles is coopetition performed?

The NGOs analysed in this case resemble the SMEs presented in Case One and Case Four. They are small organisations that specialise in social services. These organisations operate within the metro area of a regional town. The order in which these organisations carry out their practice are composed of small office spaces, meeting rooms and computer stations. Upon visiting the sites of *Care Services, Community Org* and *Community Services*, it was clear that funds had not been spent on sleek furnishings or superfluous features – the spaces were humble and functional.

Both *Community Services* and *Care Services* operate from the same heritage-listed property on a busy street of the regional town in which they are based. The office furniture is modest and made with plain wood. There are several billboards and posters with flyers and marketing material that advertise training sessions and events hosted by NGOs in the community. The most spacious rooms in the building have been set up to host meeting groups and are furnished with tables and chairs to accommodate guests. The organisations have not spent funding on modernising the interior design and the rooms still retain the look and character of a building from the 1880s. Similarly,

Community Org operates from a leased office space outside of the regional town relevant to this Case Study. The CEO of *Community Org*, *Natalie*, explained that the choice of location was based on reducing the amount of rent paid by her organisation so as to direct more funding towards clients. The orders found at *Community Org's* premises are those typical of office spaces. White collar workers sit in an open plan room. There are no cubicles or walls to separate these workers. Each has a desk assigned to them. The desk set ups are very similar to each other and include a computer, one or two monitors and a telephone. Manila folders, desk cabinets and paperwork are found throughout the office.

The arrangements observed at the organisations' site reflected NGO managers' ethos and general understandings imbuing the NGO sector. In particular, the general understandings inspiring the practices of these NGOs centred on the benefits of collaboration and knowledge sharing, supporting disadvantaged groups, ensuring funding is allocated to people in need, and a strong belief in social justice. These principles have often been formalised within each NGO's core organisational values and mission statements.

A key aspect of NGO practices appeared to revolve around sharing knowledge. NGOs have a solid drive for collaboration, and they engage with other organisations regularly. For instance, NGOs collaborate on networking activities and share information with other organisations on their area of expertise. Examples of such projects include: providing advisory activities; sharing funding opportunities; discussing policy changes; and collaborating in a consortium to combine resources on joint projects. Sharing information and opportunities is an important form of collaboration and many tenders and projects are advertised within the community of NGOs. Instances of information sharing and collaboration include supporting and consulting activities – for instance, *Natalie's* organisation allocates a project officer to its members to advise them on policy changes and how to navigate the complex environment of laws and regulations brought forth by industrial reform. Consulting activities also entail supporting managers and CEOs, providing them with professional advice and supervision. These activities also target

boards of directors and governance members with the aim of up-skilling and informing them of their responsibilities and role requirements. As well, consulting activities involve more loose information sharing about projects and general operational techniques. Exchanging insights has the purpose of filling knowledge and expertise gaps:

> *On the collaboration side it means that we participate in a wide range of networks. We value the time that we spend in those networks in [that] we actively contribute to them. We share the knowledge that we generate in running our own service with others. If another service rings us up and [says] 'look we are not quite sure how to do this or that, have you got any advice?' we give that advice* (Charles, CEO, Community Services).

Charles noted that collaboration and information sharing have also encouraged innovation within the sector. Organisations taking a competitive stance and refusing to collaborate and share information with other NGOs risk becoming obsolete and damaging their growth opportunities.

It is important to note that in recent years, the industry underwent a significant restructuring in line with new government policies. These policies have changed many of the pre-existing practice bundles in the NGO sector. Overall, the sector is now moving towards a consumer-directed care model, as opposed to the block-funding model used in the past. The two models are considerably different.

> *In the new world, the money or the funding is going directly to the client, so now we're going to be competing all for the same clients, but to a greater extent. Because… under the old funding model, the funding was only granted for us to deliver services to people from culturally and linguistically diverse backgrounds, so that was our target group. In the new model when it goes to the direct consumer, anyone can be our target group and the boundaries have changed* (Lucy, Project Manager, Care Services).

At the time of the data collection, the sector was also undergoing a major restructuring following the implementation of the National Disability Insurance Scheme (NDIS) on a federal level (NDIS 2018). The scheme introduced individualised packages of support for people with disabilities through an insurance-based model. In the NDIS model, those living with disabilities or their care-givers are assigned funding directly from the government and can choose which support services they wish to purchase. The NDIS model thus moves away from the previous welfare model of funding, in which organisations were awarded funds to provide services to the community. The new model introduced competition in the social services industry by requiring providers to compete in the market to attract clients.

> *Ultimately the objective of that approach is to provide greater choice and control in the hands of the consumer. Rather than organisations getting their giant bucket of money and the organisations deciding what services they provide, the little virtual envelope of money goes to the client. And the client says, 'I've got thirty thousand dollars to spend this year, what are you going to do for me?'* (Charles, CEO, Family Services).

The next section will present how coopetition emerges within the practice-order bundles described above.

5.5.2 Case Five, how is coopetition prefigured in the bundle of practices and orders? How does it emerge?

The governmental decision to put less emphasis on planning with communities, and more emphasis on using a top-down approach to community services provision, has introduced new bundles of practices within the sector. This new strategy has rearranged the structure of the government funding practices. In the new model, policies and intervention models are set up first and then tenders are put out to NGOs based on the requirements outlined previously. The new model has brought new competitive practices to the sector, since NGOs are now competing against each other to win

government tenders. As a result, a sector traditionally oriented towards collaboration and communication is now adapting to a more market-driven model. The shift in goals of policy making practices has therefore had a rippling effect on practice bundles performed by NGOs.

The ends pursued by the government when implementing these changes are multiple and include increasing efficiencies and driving down the cost of service procurement. Another key end pursued by the government was trying to reduce the administrative costs of the procurement process, by reducing the number of contracted suppliers (the supplier base) and awarding contracts to organisations that can deliver multiple services, such as large for-profit organisations. By changing the bundle of practices related to service procurement, the government has impacted larger bundles of practices related to community care funding, community services administration and tendering. It also appears that the general understandings driving these policy changes are rooted in neoliberal elements of insurance, investment, individual choice and markets (Miller & Hayward 2017). Consequentially, NGOs are facing pressure on two fronts. On one side, they face a more competitive funding model based on consumer choice. On the other, they are now competing against large service providers and organisation that can provide multi-disciplinary services*: "If we look at the last nine or ten years it's been much more about competitive tendering"* (Jane, ex-CEO, Family Services).

One of the key policy changes is the move towards a consumer-directed care model, as outlined in the NDIS reform. This new funding model has reshaped and changed many NGO practices. For example, in the new funding scheme, money is not allocated to single NGOs for the provision of disability services to people in need. Instead, the person in need receives the funding directly and then decides where he/she/they want to allocate the money to access services. With funding allocated directly to the customer, NGOs face market dynamics similar to those of the private sector. Due to this new policy, NGOs must now adapt to emerging projects and tasks, mostly related to competing with other NGOs to win 'customers' and receive sufficient funding to sustain their operations. This is a drastic change for many of the NGOs in the sector and for

the industry more broadly, which has witnessed the reorganisation of governmental practice goals and ends towards a market-driven model, as well as the re-composition of some existing practices and the elimination of others.

> *I think people would compete with each other when funding runs out. So that would be the main area. If a new tender comes up, people will know that other people are going for the same tender and that's when people tend to close ranks a little bit more* (Natalie, CEO, Community Org).

According to the ex-CEO of *Family Services*, *Jane*, the 'block-funding' model was based on a regional approach to planning and follows a specific chain of actions. Firstly, government officials would estimate the number of people in need of services and define the type of services required only *after* allocating a block of funding to a specific area. Service providers operating in the area would then receive a portion of funding. The new funding model focuses on contest and competition in the sector.

The new ways of working introduced by the Government require NGOs to re-arrange existing practices to suit the new environment. For example, the government reforms and the new requirements for funding are impacting collaborative agreements between NGOs, leading them towards a more formal and structured form of governance in joint projects, such as sub-contracting agreements. Collaboration is also managed through consortium agreements.

> *It's typically on individual [projects], there are quite a few examples. So we have a project working with [name removed] and a private film company and ourselves, and we [are] basically developing a series of educational resources about dementia for multi-cultural communities. Again, we jointly own the IP on that. We have a contractual agreement so that at the end of each project, when we produce a DVD it's clear who owns it and who can share it and speak on behalf of the project. There are protocols around media and all that* (Charles, CEO, Community Services).

The next section will discuss the practice elements that characterise the practices in which coopetition is present.

5.5.3 Case Five, which practice elements characterise the practices in which coopetition is present (or not)?

The main practice bundles in which coopetition transpired revolved around project management, sub-contracting and tendering. In a similar way to SMEs, tendering emerged as a key practice. As seen in Case One, the chain of actions varies. Companies either contact their competitor before a tender to prepare a joint bid for funding, or they engage with a competitor after the tender. Some of the projects and tasks performed during tendering are: preparing tender documents; sharing information; planning; and consulting with social workers. There is usually a leading bidder for each tender and the leading organisation is that which is best placed to win the contract. As observed with SMEs, then, NGOs face the choice of collaborating before or after a tender. Collaborating before a tender requires joint preparation of the tender bid, which is structured by rules around partnership agreements.

Projects include teams working together at a management level to plan and manage the work ahead of them, especially when multiple forms of expertise are required to handle complex cases for those facing an array of social issues. Collaboration can combine complementary resources, such as access to financial resources, access to customers, and insights on the market. In particular, knowledge of the region and territory and access to clients is of paramount importance for targeting projects and interventions towards people in need. Yet, collaborative projects can often be unsuccessful. For instance, *George*, the CEO of *Family Services,* estimates that three out four collaborative projects fail. Tensions within projects usually arise due to funding problems*: "There was a block of funding that was given to a number of cultural and linguistically diverse communities organisations, then all of the sudden the government decided to cease those funding so there was a lot of tension"* (Lucy, Project Manager, Care Services).

Shared general understandings, practical understandings and skills and competencies play a major role in determining the success of collaboration. The importance of a common language and the willingness of practitioners to make joint decisions are critical when collaborating. According to *Jane,* senior management plays another important role in collaborative project, by providing guidance and purpose to projects: "*If you haven't got your decisions makers at the table, you really are not able to collaborate well"* (Jane, ex-CEO, Family Services).

Despite the Government's push towards competition, NGOs remain strongly attached to their core values, which are grounded in collaboration and working in the interests of those in need. Collaboration is always encouraged to combine complementary resources and expertise to better assist people. Collaboration is also crucial due to the lack of service providers in regional areas, which requires NGOs to work together to be able to serve those communities.

Due to the close relationships between many NGOs in the sector, practitioners tend to know who is taking part in a tender. In some cases, NGO managers decide to form a consortium to take advantage of their complementary expertise and bid for projects outside their capacity. These practices are also structured by rules set up through legal contracts to ensure safety and legal standards are met as well as setting expectations about the relationship between organisations. Having a clear framework for collaborative activities is also important for managing the competitive side of the relationship. Furthermore, having a clear framework for collaborative activities is important for managing the competitive side of the relationship in the increasingly market-driven NGO sector: "*You can still maintain a collaborative relationship with somebody but there might be something else you decide to compete on and if you've set those parameters of what your relationship is going to look like, that would be okay"* (Charles, CEO, Community Services).

In another example of how NGO have adopted new, emerging practices,

George's organisation has chosen to consolidate multiple services under the same organisation to create a service stream for clients. *George*'s goal is to combine skills to create economies of scale and efficiencies. According to *George*, this strategy also has the benefit of increasing the revenue stream for the organisation, since clients can purchase multiple services from the same NGO. This model can also benefit clients as it provides continuity in the delivery of services: "*our response was a little bit contemporary, trying to be a one stop shop for those service areas that we cater for"* (George, CEO, Family Services).

George's strategy has been to avoid competition and instead acquire or merge with organisations with complementary capabilities. Further, *Charles*, the CEO of *Community Services*, has noticed that competition has forced many organisations to become more business savvy and reassess their financial administration procedures. For instance, in the case of *Charles*' organisation, the response to market changes has been directed toward modernising the business and making capital investments to stimulate growth. To this end, *Charles*' organisation purchased a client management system and hired employees specialised in business development, marketing and operations. Similarly to *Telem* in Case Three, this illustrates how government policy making practices are intertwined with business practices.

In addition, the practices in which coopetition transpire have both a prefigured and emergent character. The existing practice-order bundles in the NGO sector tend to prefigure collaboration. The practitioners' end to collaborate with others as well as the general understandings revolving around supporting social justice causes appears to channel practitioners' projects and tasks toward collaboration. For example, *Lucy's* organisation holds open sessions and conferences and participates in industry networks, with the goal of sharing information, research insights and best practice with other industry members: *"We definitely do a lot of open sessions, conferences, networks with part of at least half of a dozen formal networks and then any other informal ones"* (Lucy, Project Manager, Care Services).

The importance of maintaining open relationships with other NGOs was also stressed by *Charles*, the CEO of *Community Services*. According to *Charles*, close relationships with other organisations are beneficial for improving organisational practices, problem-solving and organisational learning: "*By having good relationships with those organisations, you pick up on stuff, you solve problems together, you start to think about joint projects and leveraging off each other to do more as a whole"* (Charles, CEO, Community Services).

People in need often have multiple, complex issues, which require specialised knowledge from diverse practitioners. Unfortunately, social work practitioners often do not have the practical understandings and specialised knowledges to carry out all of the activities required to handle such problems. By collaborating with other NGOs, practitioners can access expertise and skills in complementary areas. Further, as *Care Services* project manager *Lucy* commented, partnerships with other organisations allow her organisation to focus on their own areas of competence and improve efficiencies in the delivery of services. The ability to merge different services under a partnership or collaborative agreement is particularly useful for clients.

> *Clients in our industry are very disempowered and they don't really know where to look for services and they miss out all the time. Having good collaboration means that their case worker or the admin, the person that they first come to, knows where to get the services, where to refer them onto. Often people make referrals in our industry, so they are actually taking people to the services* (Natalie, CEO, Community Org).

As noted above, the government's new funding model has made a significant contribution to the emergence of competitive practices in the NGO sector.

5.5.4 Case Five Summary

The general understandings permeating the NGOs practices in this case were shown to influence their approach to collaboration and competition.

Coopetition was performed before or after a tender; the choice to collaborate at either point influenced the level of collaboration (strong or weak) and their main method of engaging in coopetition was related to tenders. The key practices identified revolved around project management, sub-contracting and tendering. The main goal of coopetition was to work on projects where the companies' expertise was complementary to each other, thereby increasing capacity and revenues.

5.6 Chapter Summary

Despite the variety of cases and industries analysed, the findings confirmed that coopetition is a ubiquitous phenomenon. Coopetition is enacted through a series of common business practices such as tendering, sub-contracting and project management practices. Further, coopetition is related to two bundles of practices (found in all five cases). The first bundle is composed of practices related to tendering, which include tendering practices, sub-contracting practices and project management practices. Tendering was the practice in which coopetition was mentioned most frequently by interviewees, followed by project management and subcontracting. The findings also revealed smaller bundles of practices in which coopetition was present. These were related to the setting of industry standards for product production and quality (see Case Two).

The cases presented a series of key findings regarding coopetition. The first key finding was that each of the practitioners that reported engaging in coopetition faced some type of constraint when carrying out their business activities. These constraints were mainly related to access to labour, and to knowledge about of how to perform certain activities or manufacture certain products. Practitioners had the opportunity to connect to a competitor to overcome these constraints.

The second finding was the normalisation and acceptance of coopetition as an industry practice. This was an important element of coopetition given that

practices require shared understandings and acceptance between peers. The third key finding about coopetition was that coopetition is performed through common business practices. The practitioners who were interviewed each engaged in coopetition by adapting their regular business practices, such as tendering or sub-contracting, in order to work with a competitor. Importantly it was not possible to identify an isolated coopetition practice, rather coopetition was shown to transpire amid a multitude of practices.

The fourth key finding was that coopetition appeared to permeate a sequence of interrelated practices. Hence, coopetition did not manifest within a single practice, but rather was carried out across multiple practices. Coopetition was also influenced by different practices travelling across contexts and their casual relationships. An example of this phenomenon was observed in Case Three (*Telem*) and Case Five, where governmental policy changes influenced the business practices of private and non-private organisations. Lastly, even though the practices described presented some degree of regularity (such as organisations going through a tender process to bid for work), the enactment of those practices was unique to the specific site of each organisation.

6 Discussion

This chapter will discuss the implications of the study's research findings. The discussion will draw insights from the five case studies analysed and provide an interpretation of the results from a Schatzkian Practice Theory perspective. Each section of this chapter will discuss one of the three research questions that informed the study. There will be no summary section in this chapter; instead, the conclusions that emerged from the discussion chapter will be presented in Chapter 6 of this thesis.

6.1 Amid which practice-order bundles is coopetition performed?

The first research question investigated the practice-order bundles in which coopetition is performed. Understanding the cases' practice-order bundles played a key role in the analysis of the findings, since they form the site in which coopetition transpires (Schatzki 2002). Understandably, each case presented *distinct* practice-order bundles, though *similar* bundles of practices were reproduced across multiples cases.

In Case One, coopetition practices emerged from the practice-order bundles that are often found in manufacturing enterprises. These orders were composed of small workshops where machines and materials were laid out in a job-shop layout alongside modest office spaces located in industrial areas. The many projects and tasks carried out by workers on these premises reflected

the flexible and artisanal nature of these practitioners' work on these sites. The practices described by the participants, such as tendering, sub-contracting, manufacturing products and managing contracts, reflected the highly customised jobs for which these companies get paid. In turn, coopetition was a possible path of action due to the capacity and resource constraints that these SMEs were facing when bidding for projects.

The findings from Case One (as well as Case Four and Five) supported the notion that organisations look for partners that can offer complementary resources and capabilities (Gnyawali & Park 2011). According to Gnyawali and Park (2009), organisations can pursue coopetition to increase their bargaining power and competitive capability by combining their knowledge and resources with those of competitors. These factors were often mentioned by participants in this research (Case One, Four and Five) as an essential element for taking on collaborative actions with competitors. Practitioners valued partners' complementary capabilities as well as the quality of their work. For example, *Brett* from Case One Engineering Sites stressed the fact that they had a lot of respect for their competitors' capabilities, and they were confident in the competitors' ability to complete projects on time. The results also illustrated how familiarity with competitors could increase the chances of collaboration, as previously suggested by Tortoriello et al. (2011).

Case Two resembled some of the practice-order bundles found in Case One, due to the manufacturing nature of companies such as *Veetro* and *Glass*. Like Case One, *Veetro* and *Glass'* practice-order bundles were composed of workshops, machinery and sub-contracting and project management practices. Further, coopetition was shown to be a possible path of action due to capacity and resource constraints like the ones listed for Case One (the engineering sites). Participants from Case Two, however, revealed that coopetition also transpired from other highly related work in which they were engaged; specifically, quality standards and rule setting practices. In Case Two, the practice-order bundles occurred in meeting rooms and hotels where conferences were held, as well as in meeting practices, quality standards and rule setting practices. These practice-order bundles connected multiple sites

that included individual companies' quality departments, quality and standards associations, and industry practitioners involved in these organisations.

Case Three showed that in certain sites, coopetition is neither prefigured, nor emergent or enacted. Out of the three companies analysed in this case, only *Telem* engaged in coopetition. The other two companies investigated, *Bulkgrain* and *Rail*, possess enough material resources, employees and competences to carry out their business practices on their own – thus, coopetition was not something that was prefigured, that emerged or that was enacted for these organisations. Unfortunately, it was not possible to directly observe the orders amid which *Telem's* business practiced were carried out. However, *Carol*, *Telem*'s Chief Procurement officer presented a useful and detailed account of how her organisation and its main competitor collaborated[10]. For *Telem*, coopetition transpired from the bundle of project management practices, legal practices and relationship management practices. These bundles were influenced by government policy making practices, given that *Telem* and its main competitor entered a coopetitive relationship due to government intervention in the telecommunication industry.

In Case Four, practice-order bundles existed within a specific arrangement of industrial warehouses, rail lines, pipelines and steel making furnaces as well as in sub-contracting, tendering, procuring and, it could be argued, colluding practices. Coopetition transpired amid the procurement and tendering practices of the steel manufacturer, *Steel*, and the tendering and sub-contracting practices of its contractors. *Steel* procurement practices were based on tiering suppliers and allowing only certain companies to work on its site, thereby creating a high degree of familiarity amongst its contractors and sparking coopetition within the industry. In this case, coopetition emerged at the job site inspections where company managers decided whether to compete or collaborate.

[10] Applying aspects of the ITTD (Nicolini 2009a) helped in retrieving rich descriptions of the practices and orders for this particular site.

The findings from Case Four supported the notion that buying firms can be a driving force of coopetition in a supply chain. In that respect, the results of this research supported previous findings from Wu et al. (2010) and Wilhelm (2011) on the active role of buying firms in promoting coopetition amongst suppliers. For instance, *Steel* openly used coopetition as a strategy to incentivise suppliers' performance and drive down procurement costs. This is in line with Dubois and Fredriksson's (2008) study on companies' triadic sourcing strategies to manage competition and collaboration in a supply chain triad (supplier-supplier-buyer). The authors showed that in a triadic sourcing scenario, a buyer could actively create interdependencies between its suppliers to enhance efficiency and innovation (Dubois & Fredriksson 2008). In summary, the findings showed how private companies may seek to reduce their procurement costs and utilise similar strategies to promote competition and collaboration amongst their supplier bases.

Lastly, coopetition practices in Case Five transpired amid practice-order bundles related to project management practices, tendering practices, and policy making practices within the NGO sector. Like Case Three, coopetition emerged following a series of government reforms of policies, which brought new practices to the sector. The shift in goals of policy making and funding practices had a rippling effect on practice bundles performed by NGOs, introducing new and emerging competitive practices in a sector traditionally oriented towards collaboration.

These findings support early research that the institutional framework in which organisations operate may have an impact on coopetition – namely, the impact of governments on coopetition. More specifically, government policies were shown to influence the level of competition in the NGO sector by promoting competition within said sector. Government agencies employed procurement practices like the ones used by for-profit organisations, including grouping suppliers, awarding funding to large service providers and reducing their supplier base. Like private organisations, the government's goals were twofold: reducing the administrative costs associated with the procurement of

services and stimulating competitive pricing.

The findings from Case Five (social work sites) showed how the shift of goals in policy making practices at a government level had a rippling effect on the practice-arrangement bundles performed by not-for-profit organisations. In particular, Case Five sites aligned with the findings of Mariani (2007), Barretta (2008) and Mascia et al. (2012) on how government bodies impose coopetition through policies, reform and the implementation of specific models. Another example of government influence on coopetition was found in the case of *Telem* from Case Three. In this case, the government artificially created a coopetitive relationship between the dominant telecommunication provider in the market and the government-owned enterprise, *Telem*. In turn, *Telem* and its competitor's paths of action were constrained by the need to enact government policies in their practices.

Previous coopetition literature applied greatly different ontological, epistemological and theoretical frameworks to analyse coopetition, thus Schatzkian concepts such as orders, practices and bundles add further depth and granularity to the ways in which coopetition can be discussed and understood. Previous literature does, however, focus on the 'context' in which coopetition is embedded, from the perspective of network and inter-network levels (Bengtsson & Raza-Ullah 2016). In particular, earlier studies highlighted the contextual market settings surrounding companies' activities and the influence that these factors may have on coopetition. Bengtsson and Raza-Ullah (2016) defined these factors as 'drivers' that push or pull companies to engage in coopetition. They categorised coopetition drivers as external, relational and internal (Bengtsson & Raza-Ullah 2016).

Contextual factors (as discussed in Chapter Three) are defined as the conditions in a given context, and capture the impact of both industrial structures and stakeholders' influence on coopetition (Bengtsson & Raza-Ullah 2016). The conditions of industrial contexts and influential stakeholders were present and were found to have influence in most of the cases analysed. Thus, the findings of this research support Bengtsson and Raza-Ullah's (2016)

proposition: that a combination of contextual factors and personal motivations may jointly promote coopetition. The findings also confirmed that the choice of engaging in coopetition may be driven by a combination of these factors, such as government regulations (e.g., Case Two and Case Five), buyers' procurement strategies (e.g., Case Four), and resource constraints and complementary skills between companies (e.g., Case One, Case Four and Case Five). The enactment of these factors in specific practice/order bundles at each site created unique coopetition practices for the participating organisations.

As well, the findings supported the proposition made by Dowling et al. (1996) that industrial characteristics can increase the likelihood of coopetition. According to the authors, a high degree of concentration within an industry, low availability of resources, and a high level of regulations can increase the likelihood of coopetition (Dowling et al. 1996). The finding of this study supported the argument that a high degree of concentration in the industry can promote coopetition. For instance, Case Four (manufacturing sites) presented an example of how a highly concentrated industry, defined by a limited number of companies in a supply chain, can promote coopetition. For many organisations from Case Four such as *Maintenance*, *Steel* and *Facility Services*, coopetition was driven by the high degree of familiarity between practitioners due to their personal and business relationships.

It is not surprising that the findings of this research were in line with those of earlier research investigating coopetition. Yet, by analysing the practice-order bundles in which coopetition transpired, this study was able to move beyond the general micro/macro dichotomy often proposed in coopetition studies, as discussed in Chapter Three. The assumption is that phenomena occurring at an organisational level are embedded within a larger system made up of networks of firms. In turn, macro factors such as industry structure effectively shape micro factors (a company's activities, for instance). Recently, Bengtsson and Raza-Ullah (2016, p. 32) expanded on this multilayered analysis and proposed that macro and micro factors of coopetition also influence each other: "*current outcomes shape the process, and that both the processes and the outcomes can influence the driving forces*". How macro and micro factors

influence each other, however, is not explained, nor is how processes and outcomes influence contextual factors. The opacity on how macro and micro factors influence each other is further compounded by the dearth of literature on what the process of coopetition is supposed to look like. As a result, trying to explain how coopetition processes could influence an organisation's 'context' makes little sense without attempting to explain the activities that make up coopetition or, more importantly, the practices that organise such activities.

In contrast to the limitations within existing research pointed out above, applying a SPT provides a way to explain how industrial structures, organisational activities and relationships between firms are connected through certain events and sequences, which are composed of practices, arrangements, and bundles (Schatzki 2019). SPT maintains that bundles relate, and thereby form constellations – that is, they form larger phenomena through common and orchestrated teleologies, emotions, rules, general understandings, intentional relations, chains of action, material connections among arrangements, and prefiguration. These connections and constellations were shown in the findings, highlighting that coopetition transpires within a constellation of practice-order bundles. These are linked by:

- Common and orchestrated teleologies (end, projects, actions) of practitioners seeking to maximise profits, deliver projects in full and on time, overcoming capacity issues, and procuring services at the lowest cost. (Case One, Four and Five).
- Formal and informal rules related to tendering, procuring and sub-contracting as well as general understandings related to proudness in the quality of their work, a sense of community, and mutual respect for fellow industry practitioners (Case One, Two, Four and Five).
- Casual relations resulting from practitioners directing actions towards others, such as when managers from Case One and Case Four contacted competitors to pitch a project.
- Chains of actions, such as practitioners from Case Four being called in to visit the *Steel* work site to inspect a job, managers walking on the site

and inspecting the maintenance job, and managers looking at each other and signalling to others their intentions about bidding for the job.

- Prefiguration of possible paths that practitioners could follow, which in most cases were constrained by capacity issues and lack of practical understandings on how to carry out certain projects or tasks, as well as the joint effect of the practices and arrangements these practitioners were immersed in.

Applying a SPT frame further revealed that coopetition was not confined to the business operations related to collaborating with a competitor, which implies a reductionist approach to the phenomenon that focuses solely on business activities (Adamides et al. 2012). Instead, looking at the order-bundle of practices showed how coopetition transpires from multiple practices. In particular, the choice of which practices to perform, how to enact them and how to adapt them to the situations faced by practitioners was often **prefigured** by practice-order bundles forming the site in which these practitioners carried out their activities.

As a result, the notion of the 'site' was key for understanding why certain practices, such as initiating sub-contracting to a competitor on a project, were more likely to occur than others. Social site as a conceptual element held a central role for understanding how and why coopetition happened. For instance, practitioners pointed to the importance of personal relationships created through business dealings, industry meetings practices, and site visits (e.g., Case One, Case Four and Case Five). Practitioners tended to engage in coopetition with organisations that shared similar views on collaboration and with whom they had a personal relationship, built upon prior experiences. These elements were often reported as being shared in the industry, and thus coopetition was often normalised by practitioners and described as common.

Furthermore, the adoption of a SPT perspective drew attention to the relationships between people and considered how these relationships were an integral part of coopetition. In this study, coopetitive activities were enacted through practices that implied collective norms and institutions, as well as

socially shared understandings (Meier et al. 2018) of what constituted 'coopetition'. This was another point of difference from previous coopetition literature, which overlooked issues of normativity and acceptability. Coopetition did not result from a relationship between organisations; instead, it was grounded in the relationships amid practices, orders and practitioners. Most of the study participants also referred to coopetition as something that was 'understood' in the industry as common practice and what made sense to them under certain conditions. In the cases where coopetition was not present, participants referred to coopetition as something foreign from their practices, such as in *Rail* and *Bulkgrain* discussed in Case Three.

The practices in which coopetition was present appeared to relate to the broader bundle of market practices across the cases in this study. This indicates that coopetition practices may be linked to the specific types of marked practices in line with the classification defined by Kjellberg and Helgesson (2007), which fall into three types. The first classification involves exchange practices, which refer to the activities related to individual economic exchanges. These can include negotiating prices, terms of delivery, marketing, logistics and product testing activities (Kjellberg & Helgesson 2007). According to Kjellberg and Helgesson (2007) these practices serve the purpose of stabilising *"certain conditions (the parties to the exchange, exchange object, price, terms of exchange) so that an economic exchange becomes possible"* (Kjellberg & Helgesson 2007p. 142). Project management practices and sub-contracting practices discussed in the Findings chapter related to this first category of market practices.

Within the second classification, there are representational practices. These refer to any activities that allow practitioners to understand how their markets work, *"for example when a firm collects and processes sales statistics to assess current promotion practices. In other cases, re-presentations of markets are used to establish preferable directions for some [group of] actor[s], for example as part of a firm's efforts to formulate a market strategy"* (Kjellberg & Helgesson 2007, p. 143). The cases did not present any examples of representational practices related to coopetition. This could be explained by

the fact that the practitioners interviewed were highly protective of any commercial information that could give them an advantage in the market. During the interviews with *Plumbing, Nick* — the Quality and Regulatory Affairs Manager — stressed that it was very rare for industry practitioners to share market intelligence and industry insights.

Normalising practices are the third classification of marked practices. These include activities that establish guidelines around how markets should work according to some of the market actors, and refers to the establishment of normative objectives (Kjellberg & Helgesson 2007). Practices related to quality and standard setting in Case Two (quality assurance sites) related to this third category, as practitioners collaborated with competitors to set industry rules and agreed on a set of work standards.

In sum, applying a Schatzkian Practice Theory (SPT) perspective in this research enabled a rich analysis of the multiple practices in which coopetition transpired, the material basis of such practices, and how coopetition manifested within these practices and orders. SPT's focus on orders helped in highlighting the materiality involved in coopetition, for instance by emphasizing how machines, tools, raw materials and physical constraints impacted on the practices and activities related to coopetition.

6.2 How is coopetition prefigured in the bundle of practices and orders? How does it emerge?

This section will discuss how coopetition is prefigured from existing bundles of practice-orders and how it may emerge to form new bundles. Prefiguration is a complex concept involving the notion, 'fields of possibility of action'. The main idea behind this concept is that current practices and material arrangements qualify future possible actions and courses of action as easier and harder, longer and shorter, and more and less expensive (Schatzki 2002,

2019). This aspect was evident in the findings – for example, the practitioners interviewed in this study faced a series of constraints, which represented a series of limitations to their possible actions. Practitioners also had an array of potential actions that they could choose to carry out within their organisations. Together, these two concepts of constraints and possibilities provided a deeper understanding of how human agency was linked to coopetition and rejected the idea that structural factors (such as industry conditions) solely determine practitioners' activities. This approach, based on SPT, refuted the notion that 'structure drives behaviour' as proposed by coopetition scholars (Pathak et al. 2014) as it did not fully capture the impact of human agency and the ability of human beings to change structural conditions from within.

The proposition that structure alone does not determine practitioners' activities was reinforced by the findings, which showed how practitioners could engage in an array of different practices. The practices with which they engaged offered several possible tasks, ends and goals. For instance, when faced with a tender opportunity, practitioners could try to win the project by themselves and then sub-contract parts of it, or they could work on a joint tender bid with competitors. They could also choose to forgo the opportunity and advise another company to bid for it. Each of these possibilities reflected the **open-endedness** of options faced by managers every day, which in turn generated multiple paths of actions for them.

In addition, these findings related to how practitioners engaged with their social site through practices, which were context-specific and based on the situation with which they were faced. As a result, they performed different practices according to what made sense for them to do. During the interviews, practitioners indicated that they followed competitive practices when they decided to compete (such as tendering practices), and collaborative practices when they decided to collaborate (such as sub-contracting arrangements or the joint venture arrangements). Competition was, for instance, based on tendering practices for winning projects or funding. In contrast, collaboration was based on sub-contracting and project management practices.

Collaborative practices also presented various degrees of collaboration. Weak collaborative agreements would usually be centred on post-tender arrangements in which practitioners would sub-contract parts of a project or hire another organisation's workforce. Strong collaborative practices would usually entail pre-tender arrangements that included tasks and projects related to joint decision-making at a managerial level. Project-based work with competitors was based on planning, scoping and envisioning the project and working towards a coordinated effort to complete it. This perpetuation of practices created the impression of structure even though in each case, practitioners shifted and varied those practices.

When collaboration was strong, practitioners organised intra-team activities and set up dedicated teams for each type of business activity involved in collaborating with competitors. Splitting teams and their activities was a common strategy to avoid tensions and manage relationships between organisations, as previously found by Bengtsson and Kock (2000). Practitioners in these relationships would keep open communication channels throughout their organisational level and would employ an escalation process to manage project issues. Relationships were managed through different types of agreements, including formal consortiums as well as informal agreements. Partnership agreements were also managed by stating specific rules of engagement between partners and, in some cases, by referring to a central authority to manage collaborative and competitive relationships. This aspect of the findings illustrates how practices in which coopetition was present were prefigured by existing business practices related to collaborative joint ventures between organisations, but also that collaboration is complex in nature.

Additionally, the findings supported the SPT notion that practices show simultaneous aspects of stability and change (Price 2013). For example, each of the organisations analysed performed a set of business practices to carry out their ends and projects. At the same time, these practices were constantly modified and re-arranged to respond to the changing conditions of their specific site. This constant flux of practices being performed, adapted and re-arranged created the conditions for stability and change within the

organisations that were investigated. In this regard, the findings drew some comparison with the claim made by Bengtsson and Raza-Ullah (2016) that coopetition is a dynamic process, which continually configures and reconfigures interactions between actors based on loose deals (Pathak et al. 2014; Williamson & De Meyer 2012).

Applying an SPT lens in the analysis of the findings enabled the author of this thesis to explore pre-existing constraints (e.g., capacity constraints, lack of resources) and possibilities (e.g., forming a joint venture with a competitor to prepare a tender bid) as well as how practitioners dealt with these constraints and possibilities through various practice enactments. In the findings, constraints represented the limitations that practitioners faced when operating their organisations. Possibilities represented the array of potential actions that practitioners could take. From a SPT point of view, possibility is defined as the number of potential actions and choices that human beings can take (Schatzki 2002). Practitioners navigate the multitude of possibilities offered by their context, which Schatzki (2002) defines as an open endlessness of paths. In turn, whether coopetition was enacted is the direct result of the decisions and actions made by practitioners in response to their social sites. According to Schatzki (2002) there are many paths of action, but the bundle of practices prefigures some as more clear or distant than others. In the cases presented in this study, coopetition was a path of action that appeared straightforward to some practitioners, but not others.

The notion of human agents reacting to challenges and opportunities provides a more refined explanation than the one initially proposed by Bengtsson and Kock (2000) of what drives practitioners, and what indirectly drives organisations, to pursue coopetition. The impact of human agency on coopetition was briefly taken into account by Bengtsson and Kock (2000) when they proposed that coopetition was the result of the interplay between industry forces and social structure. They write that the "*assumptions that structural conditions within an industry force firms to act in rivalry relatively to each other and that social structure and the dependence that follows from structure explain cooperation, rest on the belief that there is a*

reciprocal relation between structure and action" (Bengtsson & Kock 2000, p. 416).

As a result, Bengtsson and Kock's (2000) focus appears to be on how structure constrains action. This logic implies that by knowing which constraints are imposed on humans, it is possible to analyse and explain their actions. Schatzki (2002) agrees that patterns of actions and the relating that occurs between people results from an interplay between human agency (the capacity of a person to act in a given situation) and social structure (a network of linked social institutions, relations, customs, and values). Yet, analysing human behaviour in terms of structural constraints has some limitations. As discussed in Chapter Two, prefiguration implies that a practice will unfold a certain way, because people still need to make sense of a situation they are faced with and act upon it. In other words, there is always an interplay between an actor's agency and practice/material arrangements. For instance, Schatzki (2002) points out that describing human action solely by looking at constraints is the thinnest analysis possible. According to Schatzki (2002) the path of action that practitioners choose is not always defined by the constraints that exclude certain paths from others. He writes that "*constraint and enablement [via] the delimitation of physical and practical possibility illuminate precious little of what actually occurs in social life"* (Schatzki 2002, p. 225). **By using a SPT approach, this research was able to investigate how the combination of structure and agency brought coopetition together.** The findings therefore deepen understandings about coopetition, which go beyond Bengtsson and Kock's (2000) narrow focus on how structural conditions constrain practitioners and make coopetition a viable path of action.

In order to explain how the interplay between agency and structure works, it is useful to employ the concept of affordance. Affordance may be defined as a relationship between practitioners and their perception of their context. The concept was developed by psychologist James Gibson to describe what the environment offers to the individual (Gibson 2015). The notion of affordance focuses on two elements. Firstly, it characterises the suitability of the context

to the individual, and secondly, it depends on the intentions and capabilities of the individual on how to make use of his/her/their context. In this respect, affordance is always relational, as it expresses a relationship between an individual and that individual's context (Gibson 2015).

Recently, the concept was reprised by van der Poel and Bakker (2016) in research focusing on the practice of studying tennis. The emphasis of the authors was on the relationship between tennis players, their skills and competencies and the materials used in the game of tennis, for studying the importance of different surfaces for playing tennis. They defined affordance as:

> *What the emergent practice-as performance that one is participating in, offers, provides or furnishes. Affordances are meaningful [only] given the intention that one has or had when entering the situation. What is regarded as meaningful emerges from the interaction of the [moving] actor, having certain characteristics, intentions and competences, with the multidimensional [material, time-spatial, etcetera] context"* (van der Poel & Bakker 2016, p. 133).

According to the authors, affordance is neither a property of objects nor a property of practitioners, but instead is both a fact of the environment and a fact of behaviour (van der Poel & Bakker 2016). Affordances result in a series of options presented to practitioners on how to go about their activities when faced with a specific situation. These options can be defined as action possibilities and depend on the physical abilities of an individual as well as their goals, intentions and past experiences (Norman 2002). Affordances are never an outcome themselves but rather a mechanism through which people work within their context. Thus, affordances can invite behaviours and their outcomes but are not actions themselves. The concept of affordance helps scholars to move beyond the traditional dichotomy of objective/subjective in explaining the relationship between practitioners and their perception of their context (Evans et al. 2017).

The notion of affordance has two important implications that can advance our

understanding of social phenomena such as coopetition. Firstly, affordance as a concept helps us move beyond the 'Individual vs Structure' paradigm debate. The individualist paradigm is inappropriate because practitioners 'have to' use the material and social infrastructures that are present in their context. Thus,

> *The behaviour of [people] cannot be understood as resulting only from the free, independent, isolated choices and preferences of individuals. Behaviours are preconfigured by socio-material infrastructures and their (sometimes rather implicit) cultural and policy regimes* (Spaargaren 2011, p. 817).

The findings showed, for example, that practitioners must deal with government regulations (Case Three and Case Four), industry standards (Case Two) and other factors that are beyond their control. The structural paradigm is short sited too, since it overlooks the power of agency in carrying out social activities such as coopetition. However, the notion of affordance accounts for the structural conditions in which people operate, as well as their choices to act upon those conditions.

The SPT notion of the 'site' helped to further unpack how the concept of affordances might be understood. In particular, a second implication of using this concept is that it highlights the importance of human agency as a central component of the multiple bundles of events and processes that characterise social life (Schatzki 2019). It would be reductive to approach coopetition as a practice in which practitioners follow mindlessly. A social site conceptualisation helps to overcome some of the possible theoretical fallacies of assuming that people as mere carriers of practice. Although from a SPT perspective, practices represent the basic unit of analysis, the importance of human choices and attitudes towards practices should always be taken into consideration. The problem of downplaying the role of human agency has already been highlighted by Sayer (2013) who pointed out that conceptualising human beings as mere carriers of practices runs the risk of representing them as passive actors and ignoring their dynamic, normative and evaluating relationship to practice.

Sayer (2013) claims that Practice Theory emphasises horizontal relationships — for example, those between people, objects, discourse, bodies and activities — at the expense of vertical relationships between ideas and values and the things they are about. As a result: "*people's evaluative relation to the world is at risk of being reduced to their values as a stable set of beliefs about what is good or bad. It is, then, easy to overlook any influence from or dependence upon what happens"* (Sayer 2013, p. 180). In light of the findings of this study, the author concurs with the position taken by Sayer (2013) and maintains that coopetition cannot be reduced to the pure performance of collaborative or competitive practices.

The role of human agency in the process of coopetition was demonstrated by the continuous self-reflection of practitioners about the practices they were carrying out. This is in line with the argument expressed by Shove et al. (2012) that practices are continuously evaluated by practitioners. In particular, Shove et al. (2012) refer to Giddens' (1986) concept of 'reproduction circuit,' which shows how the self-reflective monitoring of our actions relates to the structural properties of social systems: "*Circuits of reproduction include loops of feedback (and feed forward) between individual actors engaged in monitoring the continuous flow of activity, and between these and the structural properties of social systems*" (Shove et al. 2012, p. 98). This was a key element of the relationships between practitioners, in which they regularly reviewed and assessed the benefits and outcomes of their ties with competitors. Thus, self-evaluation goes along with the practices carried out to assess personal conduct and performance (Sayer 2013; Thévenot 2001).

Overall, the findings pointed to the key influence of human agency and social structure on coopetition. Accordingly, coopetition can be explained as the outcome of how people deal with the pre-existing constraints and possibilities shaped by the practice-order bundles. The interplay between agency and structure results in competition, which is the result of affordances presented to practitioners – that is, a series of choices presented to practitioners on how to go about their activities in a particular situation. The notion of affordance

helps in highlighting how practitioners use material and social infrastructures that are present in their context to carry out social activities, like coopetition.

6.3 Which practice elements shape the practices in which coopetition is present (or not)?

This section will discuss what practice elements that shape coopetition were present across the case studies being examined. Practitioners engaging in coopetition showed several ends and goals including making a profit, maximising profits, meeting customers' expectations, completing projects in full and on time, overcoming capacity issues, dealing with machine breakdowns, accessing new clients, and managing labour shortages. Ends and goals, whether they were driving increased revenue or reacting to imposed market changes (typically driven by government practices), influenced the way coopetition was performed with other organisations and the level of closeness and openness of the relationships.

Practitioners' main ends and goals when engaging in coopetition were related to what previous literature has discussed as performance benefits. Through having relationships with competitors by selling components, companies were able to carry less inventory in-house. They were also able to rely on competitors in case of machine breakdowns. Coopetition allowed practitioners to increase their capacity without any additional costs as well as expand their sales opportunities and revenues (Case One, Case Two and Case Four). In some instances, coopetition was also a means to access new customers. In the NGO sector, as outlined in the Case Five, coopetition allowed participants to provide multiple services to people in need, and to improve the quality of their care by offering a comprehensive set of services to users.

The findings of this study support the idea that the economic benefits of coopetition relate to profitability, customer performance, market volume, and

quality of service and support. Capacity utilisation, capacity constraints and capacity expansion were also key benefits of coopetition. This is in line with previous research findings, such as the results reported by Wu et al. (2010) on the positive effect of coopetition on sales volume, market position, and quality of service support, as well as the findings of Mantena and Saha (2014) on coopetition and profitability.

Most SME and NGO practitioners in Case One, Case Four and Case Five reported some form of constraint impacting on their operations, usually in the form of labour constraints, capacity constraints and/or machinery constraints. As a result, collaboration was seen as a viable strategy to achieve win-win solutions. Collaborating with other companies, and with competitors, was often a tacit, informal practice that was evaluated on a case-by-case basis. Only in one case — Case Two with the firm *Certiso* — did a manager report coopetition as a formal business model used by his organisation.

The findings also supported previous research on how coopetition may be used to manage suppliers (Dubois & Fredriksson 2008; Wilhelm 2011) to move higher up in the value chain (Daidj & Jung 2015) and enhance performance (Ritala et al. 2014). For instance, *Steel* managed its supply chain relationships between Tier 1 suppliers through a combination of competitive tenders and collaborative projects. These strategies had two goals, the first of which was reducing the administrative costs related to managing many single procurement agreements by bundling up supply requirements in a single tender. The second goal was to drive competitive pricing amongst the supplier base. Further, the findings support Wilhelm (2011) proposition that a buying firm can manage its supply chain through the active establishment and maintenance of collaborative and competitive relationships between its suppliers.

The practitioners interviewed did not provide any examples of innovation due to collaborative activities with competitors. Collaboration with competitors did not entail R&D projects or open exchange of information either. Practitioners reported being protective of their knowledge and manufacturing techniques,

especially in the case of the engineering companies, given that manufacturing processes and techniques were often developed in-house and provided an advantage over competitors.

Therefore, contrary to previous literature, this study did not find instances where coopetition was used to improve innovation performance in any of the cases discussed. None of the practitioners interviewed mentioned innovative solutions or products developed through activities or projects with competitors. The two interviewees who were directly involved in R&D departments did not mention any collaboration on innovation and each of the participants pointed out that their R&D activities were kept in-house. The lack of evidence about innovation could also be related to the limited knowledge sharing practices between companies. The practitioners interviewed did not wish to share any knowledge with other organisations unless it related to information necessary to carry out a specific project with competitors. Indeed, there was a general tendency to protect information. This was especially evident in Case One, for which a unique manufacturing technique or product was considered a competitive advantage to be protected. Even for organisations driven by collaborative values such as in Case Five, information was shared between NGOs only when necessary, and was of a non-commercial, general nature. Even though information sharing was kept to a minimum by all the practitioners interviewed, they did acknowledge some insight-related benefits of working with their competitors. According to the participants, the significant benefits were getting to know competitors' capabilities and gaining information on tenders and projects happening in their respective industries.

Before discussing the structures of the practices in which coopetition transpired, it is important to note that none of the practices highlighted by the participants in this study stood out as a standalone coopetition practice. This elusiveness of coopetition as a practice is reflective of some of the issues encountered by other scholars, who were similarly challenged when attempting to identify the process of coopetition (Bengtsson & Raza-Ullah 2016). Clearly, applying a practice perspective to the analysis pre-emptively refuted the notion of coopetition as a process based on routines and

standardised actions, since practices are defined as open-ended and undetermined. Nonetheless, it was not clear before the start of data collection whether coopetition could be identified and if so whether it demonstrated features that would enable it to be identified as a standalone practice.

The study showed that practices that included collaborative activities and competitive activities occurred at the same time and did not exclude one another. They were related to the individual projects, tenders and business opportunities in which practitioners participated. Hence, the problem with defining how coopetition is performed lies in the difficulty of defining the boundary of the phenomenon. This issue similarly challenged Warde (2013) when trying to define eating as a practice. Warde (2013) faced the problem of defining the exact boundaries of eating practices, being at the intersection of so many others. Like eating, coopetition does not fit into the two practice categories defined by Schatzki (1996), namely dispersed and integrated practices.

Like the case of eating practices, the issue with defining coopetition as a practice relates to the problem of defining it as a phenomenon. According to Warde (2013, p. 20) it is:

> *… essential to a sociological version of the theory that we think of practices as entities. The distinction between a practice and its performances is especially important because every performance of 'X' is singular and particular, yet it is essential to be able to determine whether any such given performance truly belongs to the category of 'X-ing'. That is not straight-forward, and scholars carrying out empirical investigations frequently find drawing the boundaries around 'X-ing' highly problematic.*

In order to overcome the issue of identifying practices that do not fit into these categories, Warde (2013) proposes the concept of compound practice, which he defines as a practice that draws upon several other integrative practices (Warde 2013). Coopetition can be described as drawing upon several

integrative practices such as tendering, sub-contracting, procurement. This notion of a compound of practices helps to clarify the assumption that coopetition exists along two continua (Raza-Ullah et al. 2014). Hence collaboration and competition are not mutually exclusive. The findings support the notion that coopetition is not an either/or phenomena, but in fact, practices that carried elements of competition and collaboration in this study were bundled together in the practice-order bundles, thereby producing enactments of coopetition.

Another important point must be made about the teleoaffective regimes of the practices presented in the study. The first and most evident teleoaffective regime was the pursuit of profit. The second teleoaffective regime was the adaptability to respond with flexibility to market setting, often reflected in the opportunistic approach practitioners had to business tenders. Practitioners' pursuit of profits, coupled with their openness to create opportunities to win work, oriented projects and tasks in which coopetition was present. More significantly, these projects and tasks were normalised and accepted within the wider community of industry practitioners. This explanation of the findings contrasts much of the previous coopetition literature, which defined the phenomena as paradoxical (Bengtsson, Raza-Ullah, et al. 2016; Chen 2008; Colin et al. 2003; Raza-Ullah et al. 2014), the assumption being that coopetition juxtaposes contradicting (but interrelated) elements of collaboration and competition.

As well, according to Raza-Ullah et al. (2014) coopetition creates both positive and negative emotions that form the basis of tension in coopetition, which prevails both in the relationships between and within companies. In turn, practitioners and workers might experience more or less tension (or emotional ambivalence) depending on their involvement in different activities (Raza-Ullah et al. 2014). Bengtsson and Raza-Ullah (2016) move a step further and claim that coopetition is a complex process due to these tensions between organisations. Although the teleoaffective regimes related to coopetition may include tensions and discomfort as some of the possible emotions people experience when working with a competitor, this does not validate the claim

that coopetition itself is inherently paradoxical or riddled with tension. On the contrary, by focusing on the projects and tasks carried out by practitioners when collaborating with competitors, the findings revealed no diversions from accepted ends-projects –tasks combinations.

In summary, the findings viewed through a SPT lens illustrated how practices of competition and collaboration were bundled together amid organisational practices. More importantly, the study's results showed that coopetition as a phenomenon can be described as a compound of practices (Warde 2013), in that it draws on several integrative practices. The findings also refuted the claim that coopetition is a paradoxical phenomenon that creates tension amongst practitioners if enacted. Rather, this study revealed that practitioners were following normativised ends and projects that were considered 'common' in the industry.

7 Conclusions

The starting point of this study was sparked by an uneasiness with the dominant positivist approach to Supply Chain Management (SCM) studies. The main argument put forward was that the mainstream approach does not give enough attention to supply chain practices, practitioners and their actions. In turn, supply chain problems are considered independent from the social entities, relations and practices through which they have been produced. Hence, this study called for an alternative approach that would focus on supply chain practices, practitioners, their actions and the impacts of their decisions. Further, in its critique of the mainstream research approach, this study reviewed the three key assumptions of supply chain management, namely: how a supply chain is understood as a system of companies; how SCM's goal is to manage various flows between organisations; and how collaboration between companies is promoted over competition to support joint activity coordination. This study pointed out the multiplicity of relationships within a supply chain and how collaborative and competitive behaviours are present at the same time.

Thus, this study explored relationships between organisations in a supply chain and looked at those relationships through the lens of coopetition research, a field of study dedicated to exploring the simultaneous presence of both competitive and collaborative relationships between organisations. Given the limitations of current approaches, these topics were investigated through a theoretical framework that would allow the researcher to analyse the social practices within supply chains. The theoretical lens chosen for this project was Schatzki's (2002, 2010, 2019) Practice Theory, a sociological theory that puts 'social practices' at the centre of attention. In turn, the study's research aim

was to understand how coopetition is enacted through practices. The overall research question that drove this study was, *"How can coopetition be understood through Schatzki's Practice Theory?"*

The sub-research questions were:

- *Amid what practice-order bundles is coopetition performed?*
- *How is coopetition prefigured in the bundle of practices and orders? How does it emerge?*
- *What practice elements characterised the practices in which coopetition is present?*

The study then investigated five case studies and applied a Schatzkian Practice Theory framework to analyse coopetition. The following sections will revisit the arguments presented in this study and will show how the research aim has been fulfilled. The first section will summarise the study's main contributions. The second section will offer a critical reflection on how the study's statements have been developed in a coherent manner through each chapter. The last section will offer reflections on the limitations encountered during this work, as well as potential future research directions.

7.1 Contributions

This study investigated coopetition in supply chains through a contemporary practice theory framework — Schatzki's Practice Theory — and by doing so has contributed to several areas.

Firstly, this study has provided an alternative theoretical approach through which to analyse supply chain phenomena. The mainstream theoretical assumptions in SCM can be divided in three categories: structural assumptions that refer to how logistics phenomena are formed and related to each other; behavioural assumptions that refer to human and non-human entities in supply chain systems and how they interact; and time-related assumptions

that refer to future states or conditions of a supply chain. This study re-interpreted these key supply chain assumptions through the lens of STP Practice Theory and contributed to SCM by providing an alternative description and understandings of its main assumptions. More specifically, this study showed that from a STP perspective, complexity is not directly related to the number organisations in a supply chain system. Rather, complexity stems from the multiplicity of situations in which these different practices are carried out. Further, order is a product of the recurrent, routine and collective nature of practices, which gives the impression of order or stability. Moreover, the constant combination and perpetuation of practices create the perception of structure.

Importantly, a SPT approach implies the need to reframe supply chain phenomena, arguing that supply chain activities are realised in the daily practices between people, and between people and other objects, in a variety of diverse sites. Theorising coopetition through SPT has enabled a shift of the focus of the analysis to supply chain practitioners and the practicalities of supply chain management (the how's and why's). By adopting a SPT perspective, this study has placed the interactions between practices, orders and practitioners at the centre of its analysis. This approach has also provided a new explanation of supply chain activities, focusing on how people make sense of their world and interact with each other. Further, this approach has showed how supply chain phenomena, such as coopetition, are the projection of practices and materialities and their related dynamics and complexities.

Secondly, by adopting an SPT perspective, this research adds to what is known about supply chain coopetition. Specifically, this study has raised many questions about previously held views in the coopetition literature, around how macro factors (such as industry structure) shape micro factors (such as a company's coopetition activities) (Bengtsson & Raza-Ullah 2016). This study challenges the distinction between macro and micro phenomena used by scholars to describe coopetition phenomena. It finds such an approach to be problematic because 1) it does not explain how macro phenomena are supposed to shape micro phenomena, 2) it grants ontological primacy to macro

phenomena over micro phenomena through a top-down approach, and 3) it claims that structural factors shape coopetition by constraining activities. In contrast, SPT collapses the notion of macro and micro phenomena into smaller and larger practice-order bundles and constellations thereof (Schatzki 2002, 2010, 2019).

In response to the problematic issues pointed out above, applying a SPT lens provides a way to explain how these industrial structures, organisational activities and relationships between organisations are connected through certain events and sequences composed of practices, arrangements, and bundles (Schatzki 2019). This study showed how coopetition phenomena relate through common and orchestrated teleologies, emotions, rules, general understandings, intentional relations, chains of action, material connections among arrangements, and prefiguration. The study expanded on the concept of affordance proposed by van der Poel and Bakker (2016) by showing how it can be used to explain the interplay between agency and structure. In turn, this notion helped to highlight how practitioners use material and social infrastructures that are present in their context to carry out social activities, like coopetition.

Thirdly, this study has shown how coopetition, like other social phenomenon, is formed and created through the medium of social practices. As well, this study has deepened the understanding of coopetition, going beyond the current literature's narrow focus. This study has shown how structural conditions constrain practitioners and make coopetition a viable path of action. It has also shown how coopetitive activities enacted through practices imply collective norms and institutions, as well a socially shared understanding of what constitutes coopetition. This finding has critical implications with respect to much of the literature about coopetition, which claims that coopetition is a paradoxical phenomenon (Bengtsson, Raza-Ullah, et al. 2016; Chen 2008; Colin et al. 2003; Raza-Ullah et al. 2014). Specifically, the findings of this study challenge the assumption that coopetition juxtaposes contradicting (but interrelated) elements of collaboration and competition. By focusing on the projects and tasks carried out by practitioners and the

teleological structure of practices amid which coopetition transpired, the study revealed no diversions from accepted ends-projects–tasks combinations. Although the teleoaffective regimes related to coopetition may include tensions as some of the possible emotions people experience when working with a competitor, this does not validate the claim that coopetition itself is inherently paradoxical or filled with tension, which is often proposed by coopetition scholars.

In addition, this study has challenged the previously held process focused view of coopetition. Considering the prevalence of so-called process thinking in coopetition studies, this thesis presented a means to analyse coopetition through an alternative lens. Coopetition phenomena are constituted by and emerge as an aggregate of interlinked practices enacted by practitioners. By applying a SPT perspective to coopetition, then, this study has challenged the notion of coopetition as a process which is based on simultaneous competitive and collaborative interactions between actors. The study has demonstrated how coopetition is not made of processes or routines but instead transpires amid an array of open-ended and undetermined practices. Significantly, the study highlighted how there is no such thing as a standalone coopetition practice but instead coopetition transpires through a compound of practices.

While the author has stressed the dissonance between previous coopetition literature and this study's approach based on SPT, there are some common research agendas, such understanding how coopetition is enacted in practice, which can inform other theoretical schools too. Although other theoretical views contend with differently conceptualised elements of coopetition, and define coopetition as a process, there are points of convergence both in terms of discovering different ways of doing coopetition, the strategies for managing the complexity of the phenomena, and the interlinking between organisations through competitive and collaborative activities.

This study also builds on and contributes to Practice Theory studies. It owes a factual and interpretative debt to Schatzki (1996, 2001, 2002, 2005, 2016), especially: his ontological approach based on a site ontology; his definition of

practice stricture based on general understanding, practical understandings, rules and teleoaffective structures; and his concepts of prefiguration and emergence. As well, this study has benefited from the ideas presented by Shove et al. (2012) on the continuous self-reflection of practitioners around the practices they carry out, by Giddens' (1986) on the concept of the 'reproduction circuit' (that is, how the self-reflective monitoring on our actions relates to the structural properties of social systems), and by Warde's (2013) treatment of compound practices, which are composed of several other integrative practices. Importantly, although coopetition studies such as (Dahl et al. 2016) and (Tidström & Rajala 2016) have examined coopetition from a Strategy-as-Practice point of view, there has not been an attempt to answer the question: is coopetition a practice in itself? As such, by expanding on Warde's (2013) concept of compound practices, this study provides additional insight into how practices that carry elements of competition and collaboration are bundled together in the practice-order bundles, in order to produce enactments of coopetition. Considering the influence of Schatzki's work in Practice Theory research, this insight calls for the inclusion of the concept of compound practices within Schatzki's theoretical framework.

7.2 Revisiting the Study

The aim of this study was to understand how coopetition is enacted through practices by applying a Schatzkian Practice framework to SCM. This research was worthwhile due to multiple limitations in the current literature, which included a lack of focus on SCM practices and practitioners, and a limited understanding of what coopetition is and how it is performed in practice.

Chapter 2 explained the theoretical foundation of this research project, which was grounded on Schatzki's Practice Theory. The main focus of Practice Theory is to analyse social practices, which can be described as 'ways of doings' that are related to shared routines of behaviour. The second section presented Schatzki's Practice Theory, which is based on several key notions. Firstly, it adopts a 'flat ontology' and claims that social phenomena are laid out on one

level of reality (Schatzki 2016). Secondly, it argues that social phenomena must be studied by analysing the site amid which human coexistence emerges (Schatzki 2003). Thirdly, it considers practices as the glue of human coexistence and claims that social life transpires from the bundles of practices and material arrangements that constitute the context of social life (Schatzki 2002; Schatzki 2016). Lastly, he argues that practice-order bundles are constantly changing in a non-random way.

Chapter 3 introduced the topic of this study, coopetition, which is described as the existence of both competitive and collaborative relationships between companies. These relationships are generated by companies' endeavours to pursue private and common interests in their business relationships (Gurnani et al. 2007). The first section presented the main schools of thought in coopetition research, the Actor School of Thought and the Activity School of Thought. The Actor School of Thought analyses coopetition from a network perspective and assumes a focal company would cooperate with some companies in the network and compete with others. The Activity School of Thought focuses on coopetition at a dyadic level instead. This school of thought argues that companies simultaneously cooperate in some activities but compete in others (Bengtsson & Raza-Ullah 2016).

The chapter's second section presented a third stance on coopetition, based on a new perspective called the Blended School of Thought. This school of thought integrates the main theoretical concepts of coopetition into a coherent model (Bengtsson & Raza-Ullah 2016). Scholars from the Blended School of Thought have developed a theoretical framework based on three key components: Drivers, Process and Outcomes (DPO). The framework highlights three components of analysis: drivers of coopetition, processes of coopetition and outcomes of coopetition, which operate jointly both at a network level and at a company level. The last section of the chapter framed coopetition through the lens of Practice Theory. The author proposed that coopetition is not something that an organisation does, but rather something that people do amid practices.

Chapter 4 clarified the rationale for using a case study methodology and

illustrated the data analysis process. The choice of a case study methodology was motivated by three elements. Firstly, the research paradigm is grounded in a site social ontology and an interpretivist epistemology. The case study evidence was based on three sources of evidence: semi-structured interviews, direct-observations and documentation. Whenever possible the author also embedded elements of the 'interview to the double' (ITTD) method proposed by Nicolini (2009a). The author conducted five case studies and used semi-structured interviews as the primary source of data. The interviews were transcribed and analysed through a range of coding and data mapping techniques. NVivo 11 was used throughout the analysis.

Chapter 5 presented the findings from the cases. The data was divided into five sites. Case One (engineering sites) focused on a series of small engineering organisations. The analysis highlighted three key findings from these organisations. Firstly, the skills, know-how and materiality arrangements needed to perform business practices enabled and constrained possible paths of action. The organisations' capacity constraints and niche skills prohibited these firms from being able to compete for most of their clients' projects from start to finish. As a result, coopetition was used to overcome these limitations and secure work tendering.

Case Two (quality assurance sites), was comprised of medium-size organisations. Similar to the small organisations from Case One, their size and skillsets influenced their approach to collaboration and competition. The key finding was that competitors collaborate to define the rules that orient the activities involved in their industry practices. In turn, these rules inform and direct the performance of activities and the organisation of industry practices.

Case Three (planning and procurement sites) was made of three large organisations. Only one organisation from this case, *Telem*, engaged in coopetition, which was prompted by government regulations. As such, the main finding from this case was that coopetition practices emerged from the bundle of business practices and government policy practices.

Case Four (manufacturing sites) investigated coopetition amongst a group of organisations operating in the same supply chain, which resembled a hub and spoke structure. This case revealed two core findings: firstly, that coopetition practices are undetermined and open-ended, and that practitioners adjust their actions to fit specific circumstances; and secondly that the unfolding of coopetition activities is bound to the practices and material arrangements of a specific site.

Case Five (social work sites) investigated coopetition amongst NGOs in light of a series of governmental policy changes, which affected the funding procedures for these organisations and introduced a more competitive approach to the industry. The results showed that coopetition is used widely in this industry and is performed through a range of different practices. The key finding from this case was that the shift in goals of policy making practices had a rippling effect on the practice-arrangement bundles performed by relevant organisations.

Chapter 6 drew insights from the five cases analysed and provided an interpretation of the results from a Schatzkian Practice perspective. The research findings supported previous literature describing how a combination of contextual factors and personal motivations can promote coopetition (Bengtsson & Raza-Ullah 2016). The findings also supported the idea that the choice of engaging in coopetition is driven by a combination of these factors, such as government regulations, buyers' procurement strategies, resource constraints and complementary skills between companies. Applying a Schatzkian perspective also explicitly linked how driving factors of coopetition, its outcomes and its enactments are connected through events and sequences composed of practices, arrangements, and bundles thereof.

Importantly, the findings pointed to the influence of human agency and social structure on coopetition. Resultingly, coopetition can be explained as the outcome of how people deal with pre-existing constraints and possibilities in their context. Constraints represent the limitations that practitioners face when operating within their organisations. Possibilities represent the array of

potential actions that practitioners can take. The findings showed how practitioners navigate the multitude of possibilities offered by their social site. In addition, coopetition was shown to be the result of decisions and actions of practitioners. In the cases presented, coopetition was a path of action that appeared straightforward to practitioners.

The discussion also introduced the concept of affordance to explain how practitioners use material and social infrastructures that are present in their context to carry out social activities, like coopetition. Further, the findings viewed through a SPT perspective enabled the author of this thesis to refute of the idea that coopetition is an either/or phenomena. Rather, practices of competition and collaboration were found to be bundled together amid organisational practices. More significantly, the study's results showed that coopetition as a phenomenon can be described as a compound of practices (Warde 2013), in that it draws on several integrative practices. Lastly, the study refuted the claim that coopetition is a paradoxical phenomenon that creates tension amongst practitioners if enacted. The study revealed how practitioners were following normativised ends and projects that were considered 'common' in the industry. The next section will discuss the study limitations and opportunities for further research.

7.3 Limitations and Opportunities for Further Research

The main limitations of this study revolved around access to data, particularly access to business' sites and operations. Although these limitations did not prevent the researcher from gathering rich data from each case, the case studies were primarily based on semi-structured interviews with some observations. Some of the participants did not agree to provide open access to their sites or to observe their operations in actions directly.

It was also not possible to observe practitioners carrying out coopetition 'in

situ'. To overcome this issue, the interviews embedded elements of 'the interview to the double' (ITTD) technique proposed by Nicolini (2009a) to gain an account of the practices performed by the participants. Where possible, additional data was gathered through company documents.

The second limitation of the study was the lack of access to multiple companies involved in coopetition in any given supply chain. As a result, the majority of the interviews relied primarily on the account of coopetition from the focal organisations analysed. It was only possible for Case Four to interview multiple companies involved in coopetition within a supply chain.

Opportunities for future research are related to broadening the application of a Practice framework to coopetition. As suggested by Bengtsson, Kock, et al. (2016), this approach focuses on activities that are traditionally considered unimportant, but whose emergence is pivotal for business performance and outcomes. Hence, it would be beneficial for future studies to focus on how coopetition is talked about, performed, and communicated across and between organisations, and what the consequences are for coopetitive performance or dynamics (Bengtsson, Kock, et al. 2016). Lastly, future research could build on the findings of this study and move closer to the object of the study and be inspired by ethnographic methods (Vaara & Whittington 2012) such as document analysis, diaries, observation of meetings, shadowing techniques, presentations, and similar activities, which can improve the understanding of coopetition.

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9 Appendix 1

Interview instrument

Part 1: General information

- Name, department, role and job description.
- Overview of the company, organization of the department and main functions
- Please describe your company's general strategy to SCM

Part 2: Context of coopetition

- How do you understand cooperation and competition?
- What interests do you have to pursue both collaboration and competition?
- As a company, do you promote both collaboration and competition amongst your first-tier suppliers?
- If no, do you promote either of those? And how?
- Do your customers promote both collaboration and competition between your company and their supplier?

Part 3: Practices of coopetition

- What practices reflect cooperation?
- Could you please give me a specific example of when you cooperated with a competitor what happened? What did you do? What did the competitor do?
- What practices reflect competition?
- Could you please give me a specific example of when you competed with a competitor what happened? What did you do? What did the competitor do?

Part 4: Goals and ends of coopetition

- In entering a collaborative relationship with a company what were the advantages that you envisaged?
- Were these advantages realized?
- Could you please give me a specific example?

Part 5: Conclusions

- Is there anything you would like to add to the discussion?
- Do you have any questions about the research?

Thank you for your time

10 Appendix 2

CONSENT FORM FOR

RESEARCH TITLE: "How do companies compete and cooperate at the same time? An explorative investigation of supply chain networks"

RESEARCHER/S: Mr Alberto Ordigoni, Dr Joshua Fan, Dr Tillmann Boehme, Dr Oriana Price

I have been given information about the research project titled: *"How do companies compete and cooperate at the same time? An explorative investigation of supply chain networks"*.

I have discussed the research project with *Mr Alberto Ordigoni,* who is conducting this research as part of a *doctoral degree* supervised by Dr Joshua Fan and Dr Tillmann Boehme from the School of Operations of *the Faculty of Business* at the University of Wollongong.

I have been advised of the potential risks and burdens associated with this research, which include taking part in a one-hour interview. I have had an opportunity to ask *Mr Alberto Ordigoni* any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, and I am free to refuse to participate. I understand that the limit for the withdrawal of any data is 3 months from the date this consent form is signed. My refusal to participate or withdrawal of consent will not affect *my treatment or my relationship with the University of Wollongong in any way.*

I understand that if I have any further enquiries about the research, I can contact Mr Alberto Ordigoni, Dr Joshua Fan, or Dr Tillmann Boehme.

Mr Alberto Ordigoni	Dr Joshua Fan	Dr Tillmann Boehme	Dr Oriana Price
PhD Student	Principal supervisor	Second supervisor	Third supervisor
Sydney Business School	School of Operations	School of Operations	School of Management
Faculty of Business, UOW	Faculty of Business, UOW	Faculty of Business, UOW	Faculty of Business UOW
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If I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email: rso-ethics@uow.edu.au.

I understand that the data collected from my participation will be used for doctoral study dissertation, journal articles, conference papers and book chapters, and I consent for it to be used in that manner.

By signing below, I am indicating my consent to (please tick):

- Participate in the interview
- Allow the interview to be audio-recorded
- Allow the researchers to observe the organisation's facilities and processes
- Allow the researchers to use the data collected for the purposes stated above

Signed Date

Name (please print)

11 Appendix 3

PARTICIPANTS INFORMATION SHEET

TITLE: *"How do companies compete and cooperate at the same time? An explorative investigation of supply chain networks"*

PURPOSE OF THE RESEARCH
The focus of this study is on competitive and collaborative (co-coopetitive) relationships between companies. This research aims to develop an understanding of companies' motivations and the potential benefits of pursuing both competition and collaboration in a supply network. In particular, this research focuses on the analysis of companies' activities, the mechanisms through which companies balance competition and collaboration with their supply chain partners and the benefits resulting from both competitive and collaborative relationships.

INVESTIGATORS

Mr Alberto Ordigoni	Dr Joshua Fan	Dr Tillmann Boehme	Dr Oriana Price
PhD Student	Principal supervisor	Second supervisor	Third supervisor
Sydney Business School	School of Operations	School of Operations	School of Management
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PARTICIPATION DETAILS
If you choose to be included, you will be asked to participate in a one-hour interview. Possible questions may be (but are not limited to):

- What are the motivations for buyers and suppliers to engage in co-opetition?
- Which companies actively manage co-opetition in a supply chain network?
- What are the advantages of competing and collaborating at the same time?

We request your permission to record the audio of the interview. We also request your permission to observe your organisation facility and processes. The observations will only focus on process and production layouts. Human behaviour will not be observed. You may withdraw your involvement in the

study or any data you have provided the researchers by contacting Mr Alberto Ordigoni. However, the time limit for the withdrawal of the data is 3 months from the date the consent form is signed.
The information will be kept secure and confidential on an electronic file on the researcher's university computer for a period of five years, after which the data will be destroyed. Access to the data will be restricted to the student, the principal and the second supervisor. Your identity and your organisations' details will not be disclosed at any time. Personal and business' names will be referred to through pseudonyms in the researcher's writing.

The primary use of this data collection is to be used in a Doctoral Study. However, we wish to make you aware that the data may be used in the student's future publications. Specifically, it will be in the form of journal articles, conference papers or book chapters. Nonetheless, participants and organisations' details will remain private.

POSSIBLE RISKS AND INCONVIENCES FROM PARTICIPATING
We do not expect significant issues or inconveniences to arise during the course of this research. The only foreseeable harm involving participants lies in participants dedicating their time for an interview. As such, interviews are not expected to exceed an hour. Refusal to participate will not affect your relationship with the University of Wollongong.

BENEFITS OF THE RESEARCH
This research has both theoretical and practical uses. From a theoretical perspective, this project will contribute to our understanding of co-coopetitive dynamics in supply chain network, and in particular, how they impact of supply chain performance.
From a practical perspective, the research will shed light on the benefits of co-operative relationships for buyers and suppliers. It will also explain the major sources of tension in co-coopetitive relationships, and how to manage the tension between the need to pursue both private interests and supply chain goals.

ETHICS REVIEW AND COMPLAINTS
The Human Research Ethics Committee (Social Science, Humanities and Behavioural Science) of the University of Wollongong has approved this research. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UOW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

CONTACT DETAILS
If you have any questions about this research, please contact Mr Alberto Ordigoni, Dr Joshua Fan or Dr Tillmann Boehme.

Thank you for your interest in this study.